CFS-DW80

SERVICE MANUAL

AEP Model
E Model

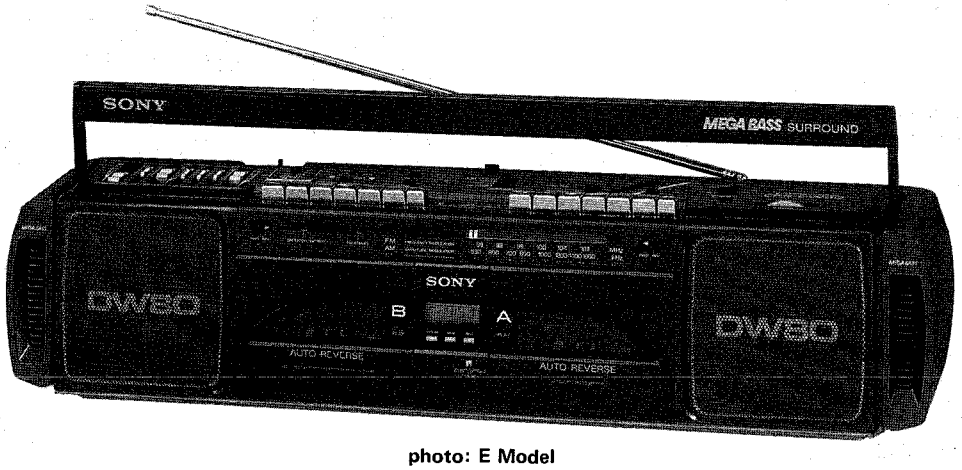


photo: E Model

SPECIFICATIONS

Frequency range

Model	FM	AM
AEP	87.6–107 MHz	531–1602 kHz
Italian	87.5–108 MHz	526.5–1606.5 kHz
Saudi Arabia	87.6–107 MHz	530–1605 kHz
E	87.6–108 MHz	

Antenna — FM Telescopic antenna
AM Built-in ferrite bar antenna

Tape recorder section and general

Recording system — 4-track 2-channel stereo
Fast winding time — Approx. 2 min. with Sony cassette C60 (deck A, deck B)
Frequency response (total)
TYPE I (NORMAL)
60 Hz — 13,000 Hz
Playback:
TYPE I (NORMAL)
40 Hz — 14,000 Hz
TYPE II (CrO_2), IV (METAL)
40 Hz — 14,000 Hz

Inputs

	Sensitivity	Input impedance
MIX MIC	2.5 mV	For low impedance microphone
CD/LINE IN	0.44 V	47 k ohms

Outputs

	Load impedance
HEADPHONES (stereo mini jack) (2)	16 — 300 ohms

Speakers — Full-range speakers: 10 cm (4 inch) dia. cone type
Super woofer: 8 cm (3¼ inch) dia.
Surround speaker (monaural, mini jack) (2)
3.2 — 8 ohms
Power requirements — 9 V DC, six R20 (size D) batteries for radio cassette-corder
DC 1.5V, a R6 (size AA) battery for clock/timer

Model Name Using Similar Mechanism		New
Tape Transport Mechanism Type	DECK A	MF-DW80PB-62
	DECK B	MF-DW80RP-62

AEP, Italian models	220 V AC, 50 Hz
Saudi Arabia model E model	110–120 V or 220–240 V AC adjustable, 50/60 Hz

Power consumption

AEP, Italian models	23 W
E, Saudi Arabia models	20 W

Battery life (for radio cassette-corder)

	FM Recording
Sony SUM-1 (NS)	approx. 16 H
Sony Alkalne AM1 (N)	approx. 25 H

Battery life (for clock/timer)

Sony SUM-3 (NS)	Approx. 2 years

Dimensions — 600 × 140 × 163 mm (w/h/d)
(23⅝ × 5⅝ × 6½ inches)
incl. projecting parts and controls
Weight — Approx. 5.7 kg, incl. batteries
(Approx. 12 lb 12 oz)
Supplied accessory — AC power cord (1)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

RADIO CASSETTE-CORDER

SONY®

MICROFILM

FEATURES

CFS-DW80 is an FM/AM radio cassette recorder.

High quality sound
Powerful bass is produced with the Sony MEGA BASS system. This unit incorporates a super woofer, which has its own amplifier separate from the one for the full-range speaker.

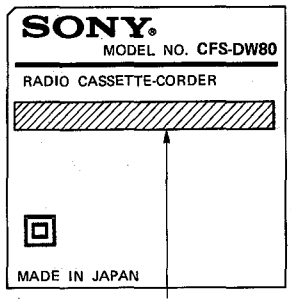
Auto-reverse double cassette deck
Deck A: Auto-reverse playback
Deck B: Auto-reverse recording and playback

Digital clock timer
Wake up to a radio or taped programs.

Other
- Timer recording of radio programs
- Built-in surround sound circuit
- High or normal speed tape dubbing

MODEL IDENTIFICATION

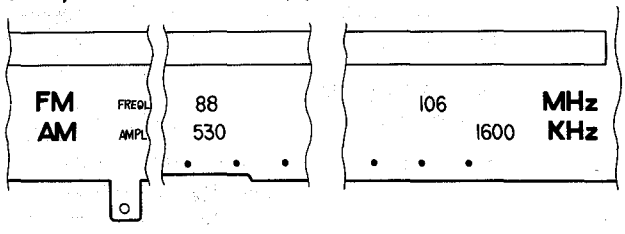
– Model Number Label –



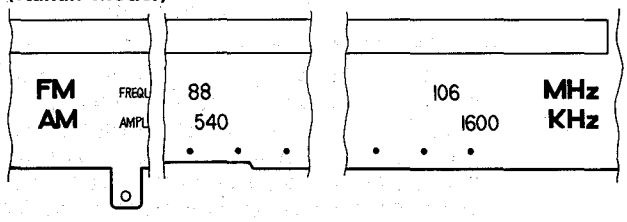
AEP, Italian Models: AC 220 V 50 Hz 23 W
E, Saudi Arabia Models: AC 110–120/220–240 V 50/60 Hz 20 W

– Dial Scale Plate –

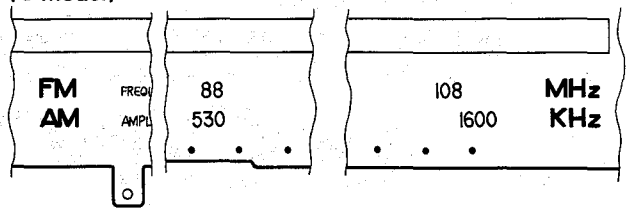
(AEP, Saudi Arabia models)



(Italian model)



(E model)

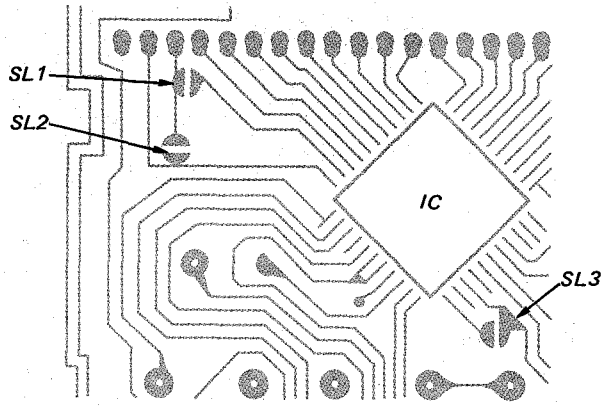


NOTE FOR CLOCK UNIT REPLACEMENT

Replacement part of clock unit is set for E and Saudi Arabia models.

When replacing clock unit of AEP and Italian models, change the pattern connection as shown below.

model	E, Saudi Arabia (replacement part)	AEP, Italian
time indication	12–hours	24–hours
SL1	short	short
SL2	open	open
SL3	open	short



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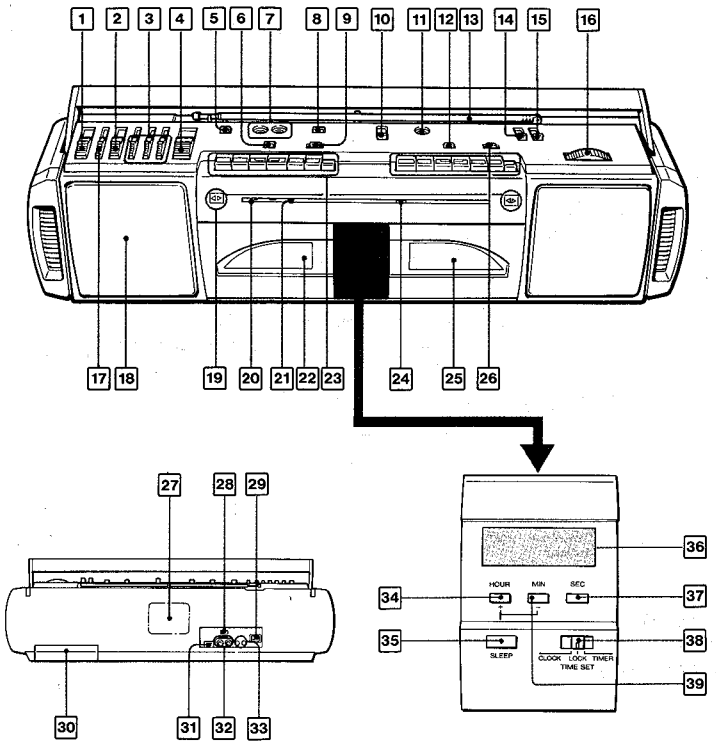
SECTION 1
GENERAL

LOCATION AND FUNCTION OF CONTROLS



[1] **VOLUME control**

[2] **BASS BOOST control**

[3] **GRAPHIC EQUALIZER control**

[4] **SURROUND EFFECT control**

[5] **SURROUND switch**

[6] **REC MUTE (record muting) button**

[7] **HEADPHONES jacks Ⓐ/Ⓑ** (stereo minijacks)
Jack Ⓐ When the headphones are connected to the jack, the sound from the speakers does not come out.
Jack Ⓑ Even when the headphones are connected to the jack, the sound from the speakers comes out.

[8] **TIMER/SLEEP switch**
Normally, set to OFF.

[9] **DIR (direction) MODE selector** (deck B)

[10] **FUNCTION selector**
CD (Compact Disc)/LINE IN (input)
RADIO
DUBBING
TAPE (RADIO OFF)

[11] **MIX MIC jack**

[12] **TAPE SELECT switch (for playback)**

[13] **Telescopic antenna**

[14] **FM MODE switch (AEP, Italian models)**

[15] **BAND selector**

[16] **TUNING knob**

[17] **BALANCE control**
Adjust the balance of the left and right channel output levels.

[18] **Speaker**

[19] **FWD/REV (forward/reverse) indicators**

[20] **OPR/BATT (operation/battery) indicator**

[21] **FM STEREO indicator**

[22] **Cassette holder (deck B)**

[23] **Tape operation buttons**
(Deck B)
■⏏ STOP/EJECT
❚❚ PAUSE
◀◀ (leftward fast winding) ┐cue/rewiew function
▶▶ (rightward fast winding) ┘
◀ PLAY
REC (recording)
◀‖▶ DIR (tape transport direction)
(Deck A)
■⏏ STOP/EJECT
❚❚ PAUSE
◀◀ (leftward fast winding) ┐AMS (Automatic Music System)
▶▶ (rightward fast winding) ┘
◀ PLAY
DUBBING SPEED (high speed dubbing)
◀‖▶ DIR (tape transport direction)

[24] **Dial scale and pointer**

[25] **Cassette holder (deck A)**

[26] **DIR MODE (direction mode) selector (deck A)**

[27] **Super woofer**

[28] **Voltage selector (E, Saudi Arabia models)**

[29] **AC IN jack**

[30] **Battery case (bottom)**

[31] **ISS (Interference Suppress Switch)**

[32] **CD (Compact Disc)/LINE IN (input) jacks**

[33] **SURROUND SP (speaker) jacks** (mini jacks)

Timer operation buttons

[34] **HOUR setting button**

[35] **SLEEP button**

[36] **Display window**

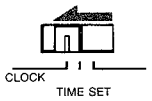
[37] **SEC (second) setting button**

[38] **TIME SET switch**

[39] **MIN (minute) setting button**

Setting the Clock

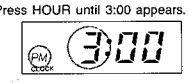
1 Set TIME SET to CLOCK.



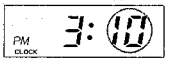
2 Adjust the clock to the current time.

Example: Set to 3:10 PM.

1 Press HOUR until 3:00 appears.



2 Press MIN until "10" appears.



Hour and/or minute can be changed continuously by keeping the HOUR and MIN button pressed.

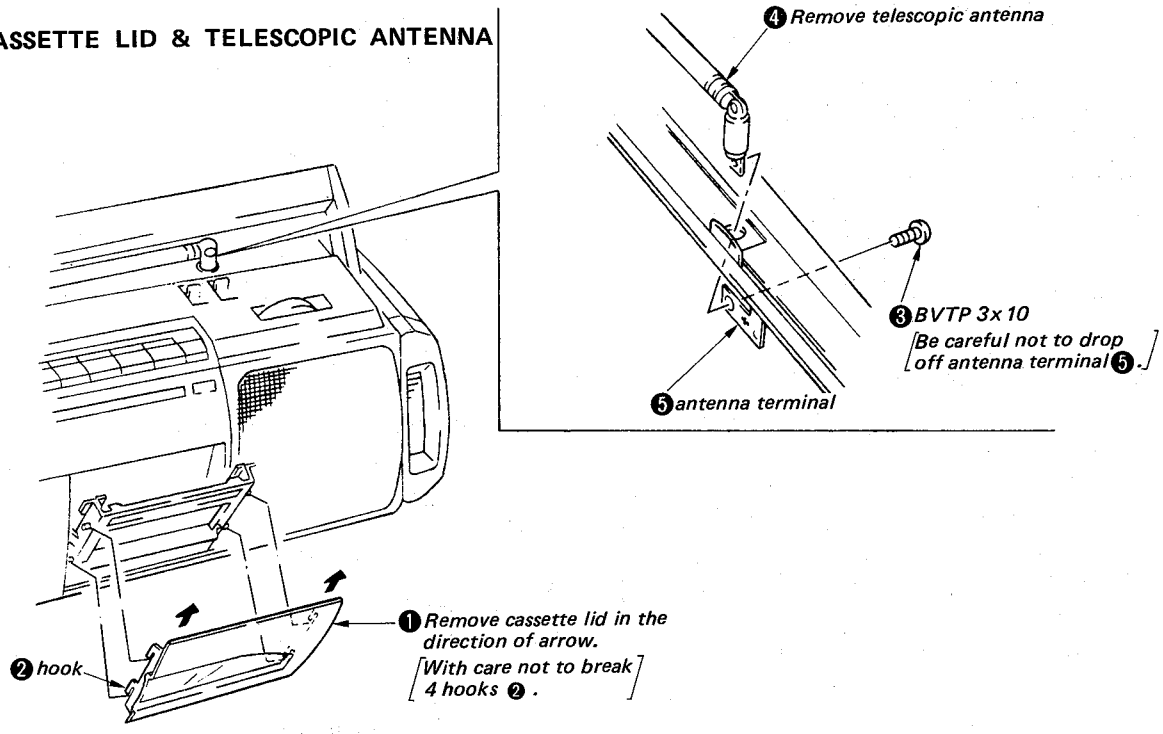
3 Set TIME SET to LOCK.

SECTION 2
DISASSEMBLY

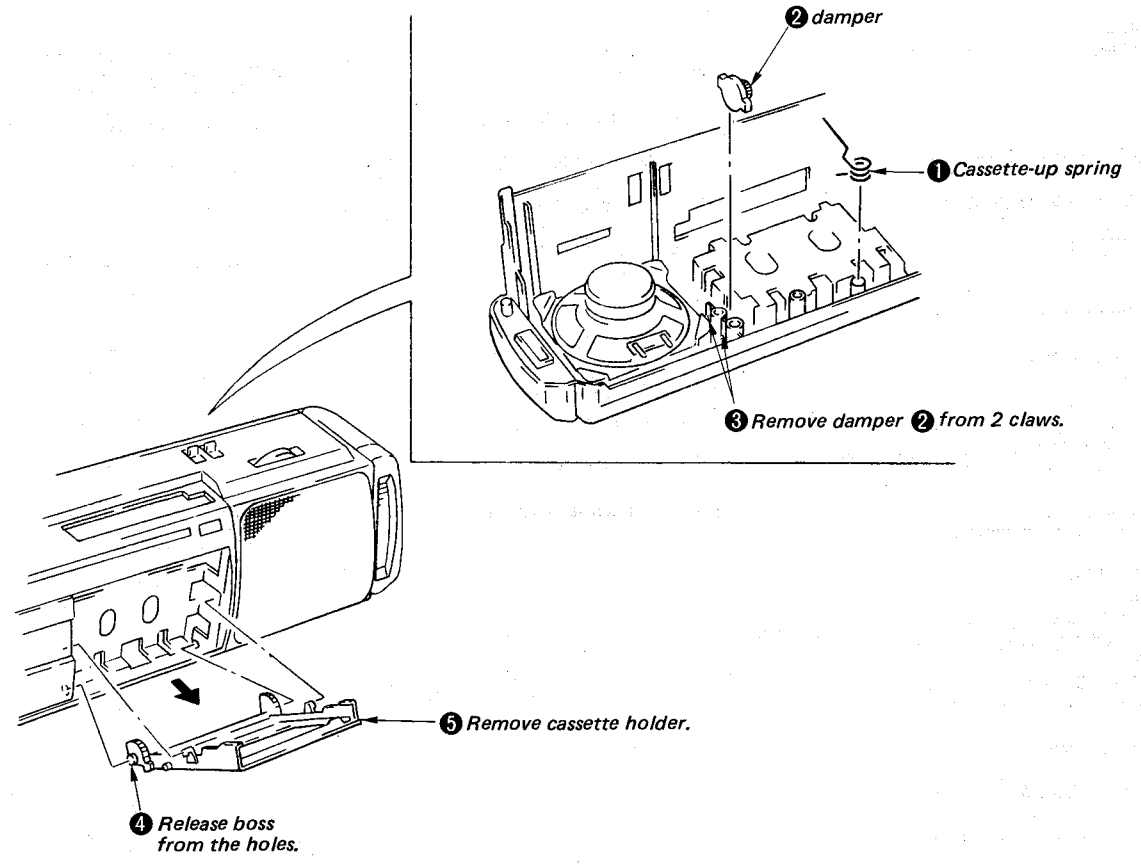
2-1. REMOVAL

Note: Follow the disassembly procedure in the numerical order given.

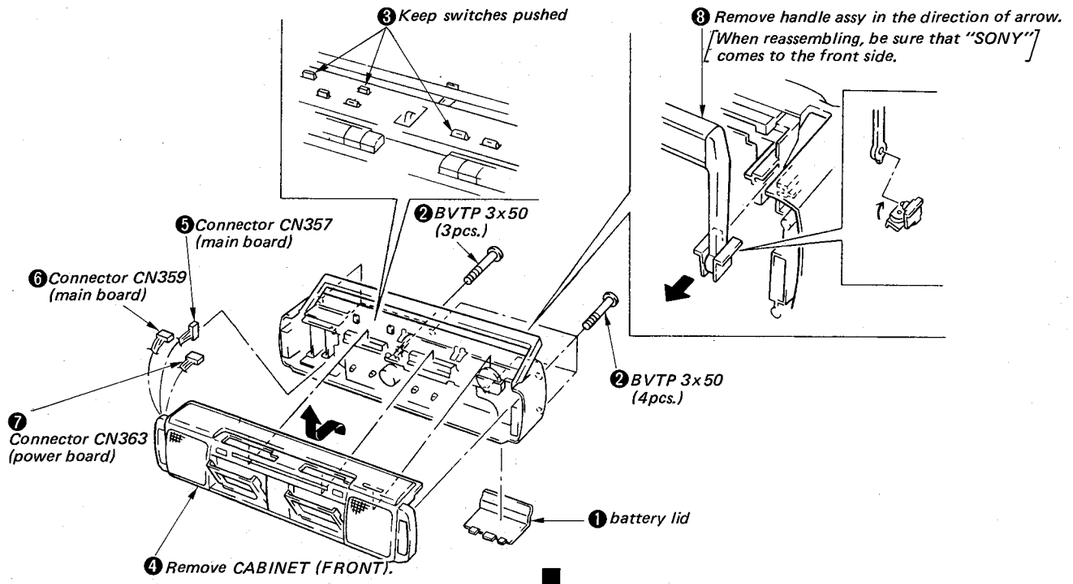
CASSETTE LID & TELESCOPIC ANTENNA



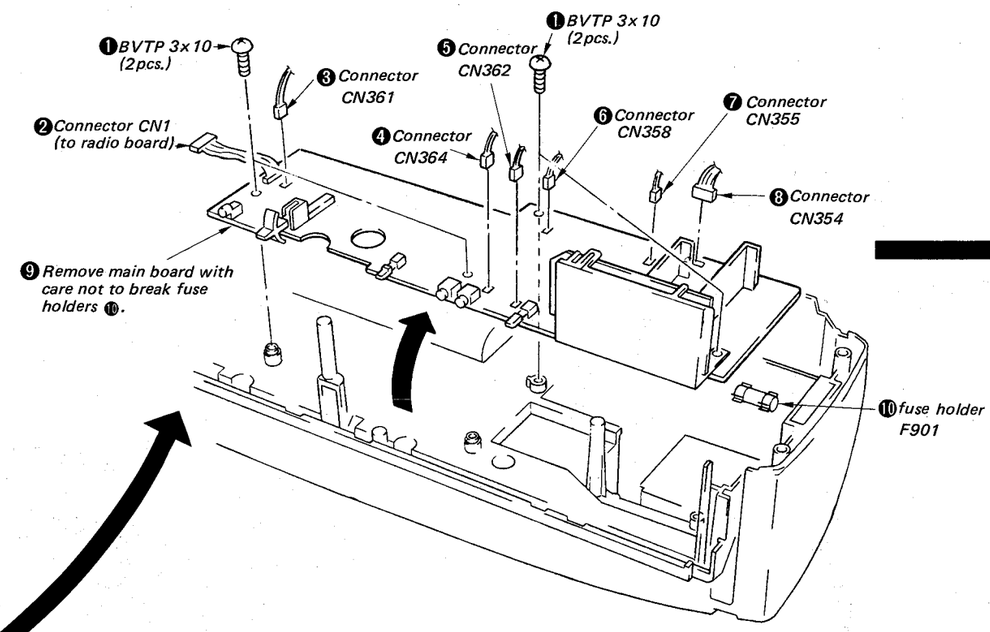
CASSETTE HOLDER



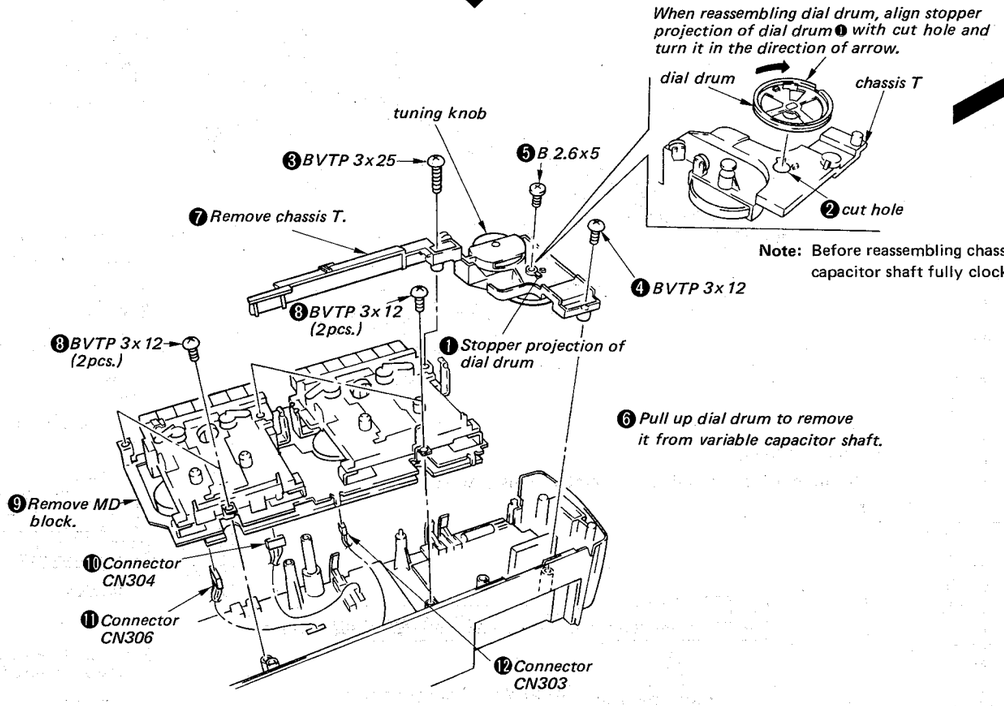
FRONT CABINET AND HANDLE


❸ Keep switches pushed
❽ Remove handle assy in the direction of arrow.
[When reassembling, be sure that "SONY"]
[comes to the front side.
❺ Connector CN357 (main board)
❷ BVTP 3x50 (3pcs.)
❻ Connector CN359 (main board)
❷ BVTP 3x50 (4pcs.)
❼ Connector CN363 (power board)
❶ battery lid
❹ Remove CABINET (FRONT).

MAIN BOARD

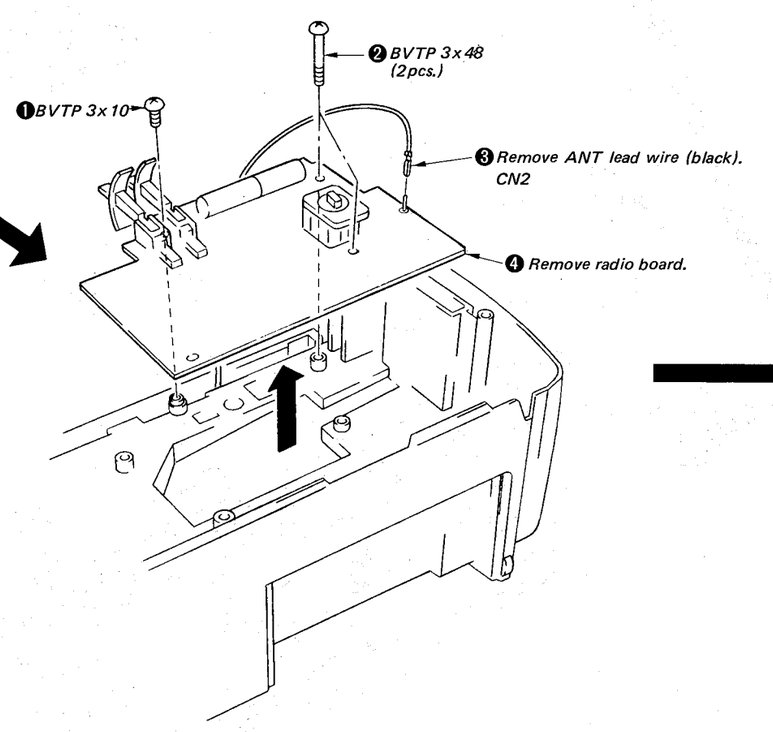

❶ BVTP 3x10 (2pcs.)
❶ BVTP 3x10 (2pcs.)
❺ Connector CN362
❸ Connector CN361
❷ Connector CN1 (to radio board)
❹ Connector CN364
❻ Connector CN358
❼ Connector CN355
❽ Connector CN354
❾ Remove main board with care not to break fuse holders ❿.
❿ fuse holder F901

CHASSIS T AND MD BLOCK

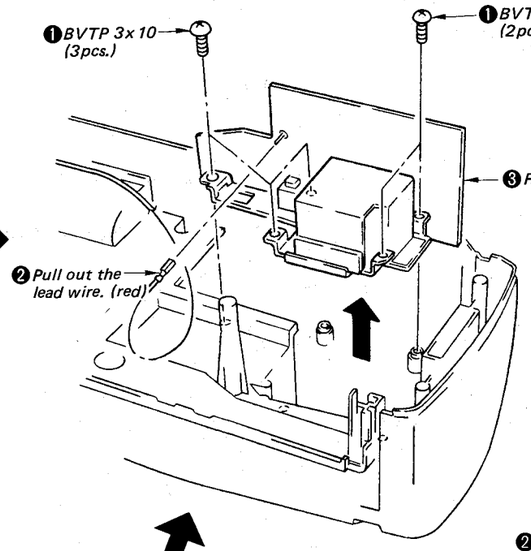

When reassembling dial drum, align stopper projection of dial drum ❶ with cut hole and turn it in the direction of arrow.
dial drum
chassis T
❷ cut hole
tuning knob
❸ BVTP 3x25
❺ B 2.6x5
❼ Remove chassis T.
❹ BVTP 3x12
❽ BVTP 3x12 (2pcs.)
❶ Stopper projection of dial drum
❽ BVTP 3x12 (2pcs.)
❻ Pull up dial drum to remove it from variable capacitor shaft.
❾ Remove MD block.
❿ Connector CN304
⓫ Connector CN306
⓬ Connector CN303

Note: Before reassembling chassis T, turn variable capacitor shaft fully clockwise.

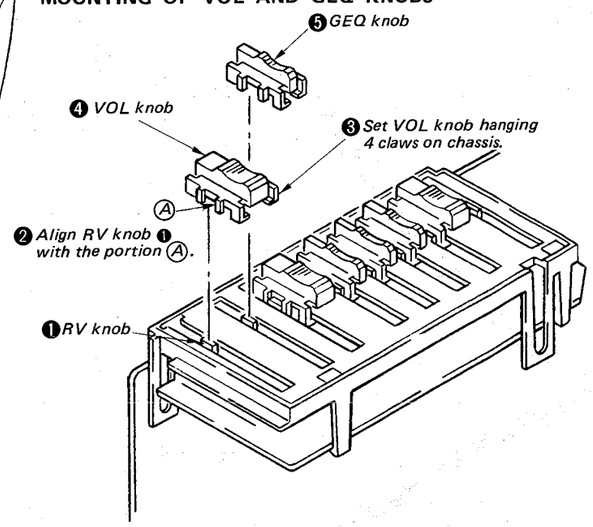
RADIO BOARD



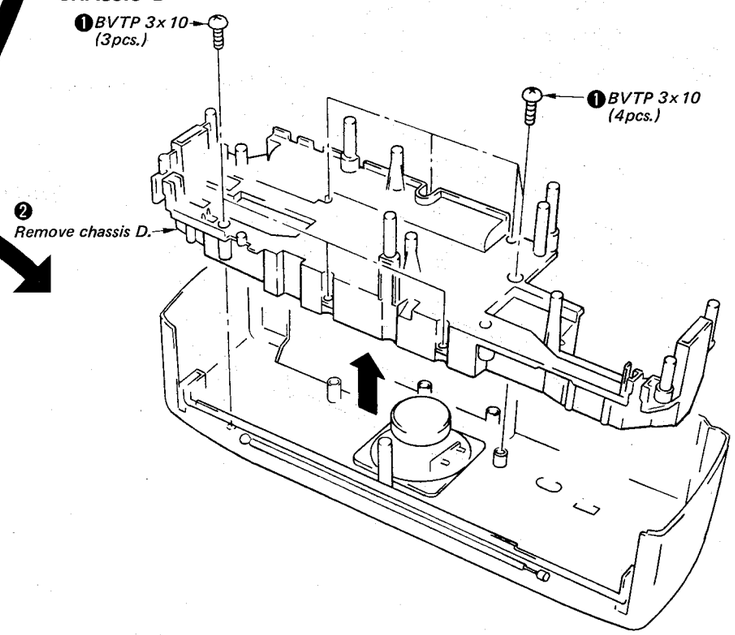
POWER BOARD



MOUNTING OF VOL AND GEQ KNOBS

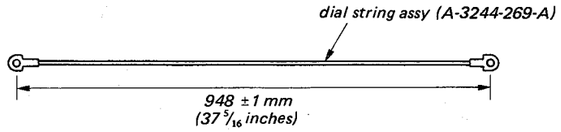


CHASSIS D



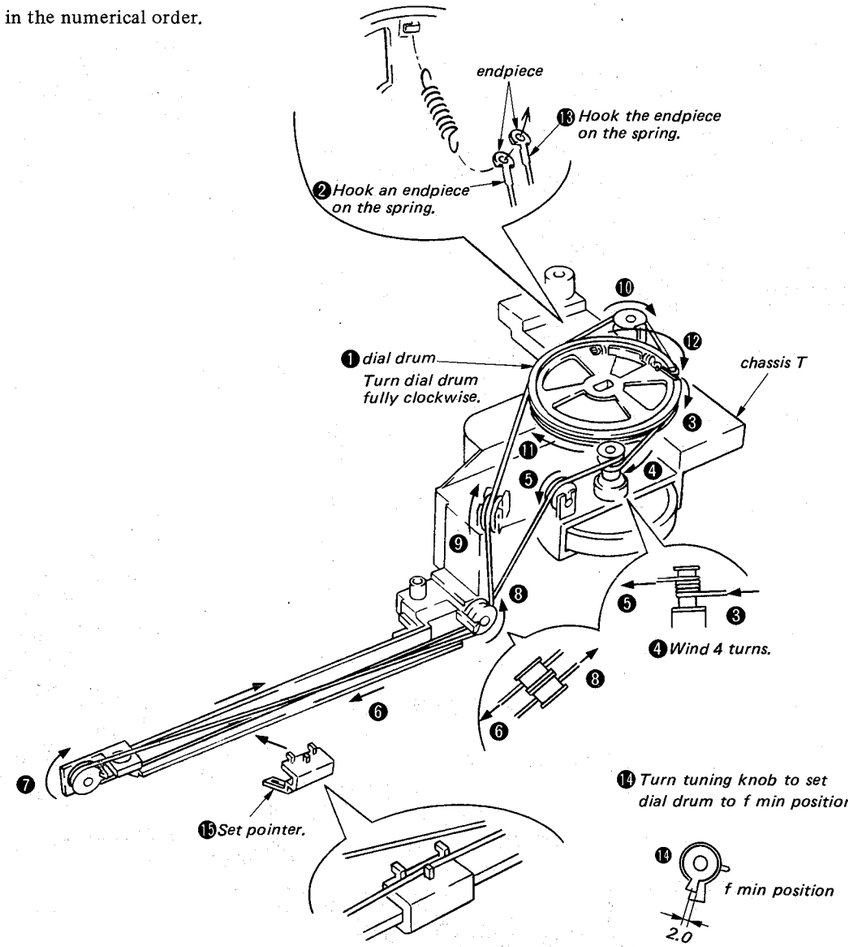
2-2. DIAL CORD STRINGING

1) Preparation



2) Stringing

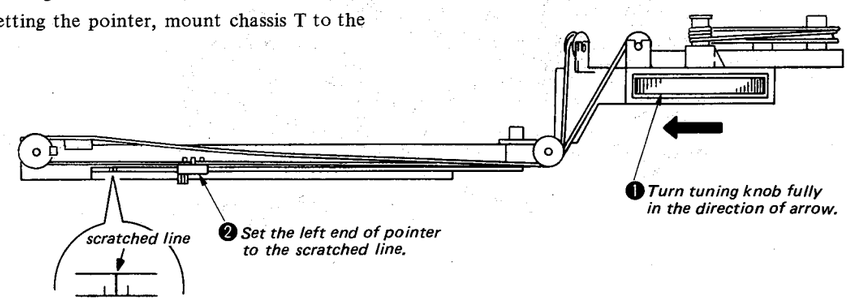
Install in the numerical order.



(See chassis T disassembly at page 5.)

3) Pointer Setting

Before setting the pointer, mount chassis T to the set.



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

TAPE RECORDER SECTION

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

   record/playback head — pinch rollers
   erase head — rubber betls
   capstans — idlers

2. Demagnetize the record/playback/erase head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted. (Rated voltage 9V)
6. The adjustments should be performed in the order given in this service manual.

DECK A **DECK B**

Torque Measurement

Mode	Torque meter	Meter reading
NOR	CQ-102C	20 – 60 g·cm (0.28 – 0.83 oz·inch)
NOR back tension		2.0 – 6.0 g·cm (0.028 – 0.083 oz·inch)
REV	CQ-102RC	20 – 60 g·cm (0.28 – 0.83 oz·inch)
REV back tension		2.0 – 6.0 g·cm (0.028 – 0.083 oz·inch)
FF, REV	CQ-201B	mare than 75 g·cm (more than 1.04 oz·inch)

Tape Tension

Mode	Tension meter	Meter reading
NOR	CQ-403A	mare than 70 g (mare than 2.47 oz)
REV	CQ-403R	

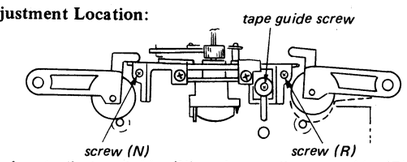
Tape Pass Adjustment **DECK A** **DECK B**

Procedures:

1. Install a mirror cassette CQ-009C.
2. Playback mode.
3. Adjust the head height by shim (N), shim (R) and tape guide screw to eliminate tape curl and tape twist in the portions of tape guide and head.

Note: Adjust both NOR and REV modes.

Adjustment Location:



Insert adjustment shim (N)

Part No.	t
3-344-765-01	0.1
3-344-765-11	0.2
3-344-765-21	0.3

Insert adjustment shim (R)

Part No.	t
3-344-766-01	0.1
3-344-766-11	0.2
3-344-766-21	0.3

(Illustration is DECK A.)

3-2. ELECTRICAL ADJUSTMENTS

TAPE RECORDER SECTION

PRECAUTION

1. Adjustments should be performed in the order given. Generally playback circuit adjustments should be completed before performing recording circuit adjustments.
2. Adjustments should be performed for both L-ch and R-ch. Switches and controls should be set as follows unless otherwise specified.

   MAIN VOL: the point where output level at headphones terminal (32Ω) is –10dB.
   GEQ VOL: mechanical mid
   BASS BOOST: mechanical mid
   FUNCTION: TAPE
   BALANCE: mechanical mid
   SURROUND: OFF
   TAPE: NORMAL

0dB = 0.775 V

- Standard input level

Input Pin	MIX MIC	LINE IN
Signal source impedance	300Ω	10kΩ
Input signal level	2.45 mV (–50 dB)	0.43 V (–5 dB)
Frequency	1 kHz	1 kHz

- Standard output level

Output Pin	SP OUT (L.R)	HEADPHONES
Signal source impedance	3.2Ω (M•BASS, 4Ω)	32Ω
Output signal level	0.775 V (0 dB)	0.24 V (–10 dB)

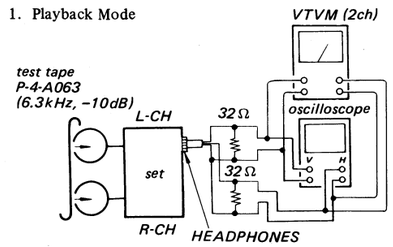
- Test tape

Type	Signal	Used for
P-4-A063	6.3kHz, –10dB	head azimuth adjustment
WS-48A	3kHz, 0dB	tape speed adjustment

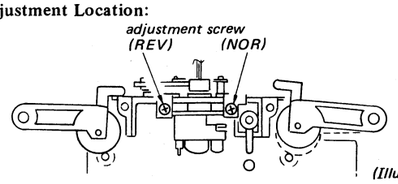
Head Azimuth Adjustment **DECK A** **DECK B**

Procedure:

1. Playback Mode



Adjustment Location:



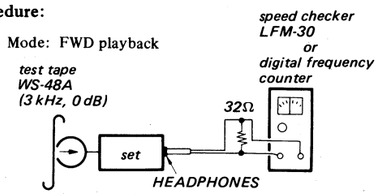
(Illustration is DECK B.)

Note: Adjust both NOR and REV modes.

Tape Speed Adjustment **DECK A** **DECK B**

Procedure:

Mode: FWD playback



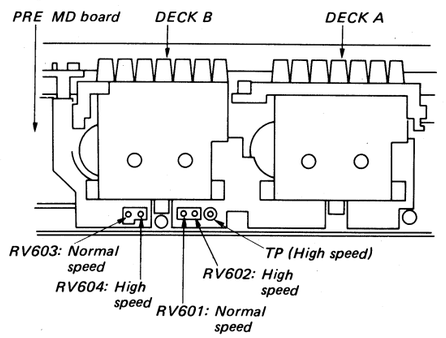
1. Short TP (High Speed) for a high speed mode and adjust RV602 (DECK A) and RV604 (DECK B).
2. Open TP (High Speed) and adjust RV601 (DECK A) and RV603 (DECK B).

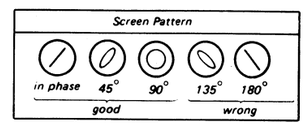
Specifications:

	Test points	Adjustment		Frequency counter
High speed	Short	DECK A	RV602	6000 ±60 Hz
		DECK B	RV604	
Normal Speed	Open	DECK A	RV601	3000 ±30 Hz
		DECK B	RV603	

Frequency difference between the beginning and the ending of the tape should be within 1% (30Hz: normal speed). Confirm that the above specification is satisfied in REV playback mode as well.

Adjustment Location: PRE MD board





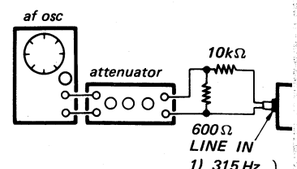
1. Turn the adjustment screw for the maximum output levels of the both channels and also the difference between them should be within 2dB.
2. In REV playback mode, perform the above adjustment. After the adjustment confirm to obtain the specification in NOR playback mode again.
3. Accomplish the adjustment turning the screw in tightening direction.

Record Bias Adjustment

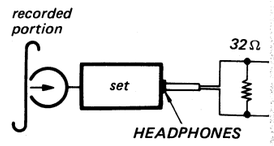
Setting:
GEQ: mechanical mid
FUNCTION: TAPE (RADIO OF

Procedure:

1. Mode: record

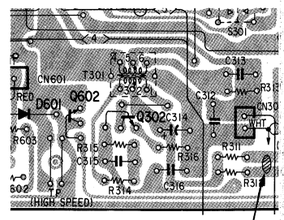


2. Mode: playback

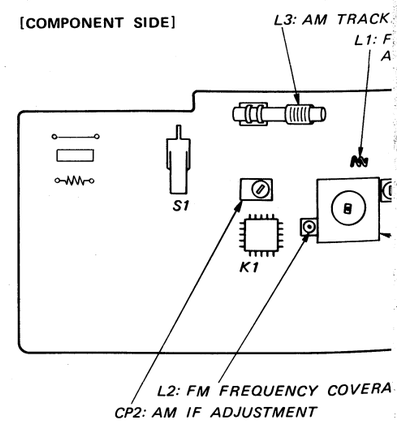


3. Confirm that the 6.3 kHz playba
   0 ±3 dB relative to the 315 Hz sign
   If the above specification is not
   move a solder bridge at the portio

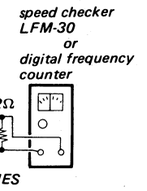
Adjustment Location: PRE MD BO
(Conductor si



Adjustment Location: RADIO BOARD



A DECK B



ES

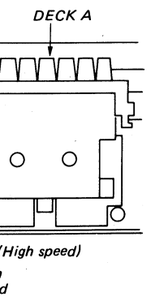
peed mode and adjust RV602

V601 (DECK A) and RV603

tment	Frequency counter
RV602	6000 ±60 Hz
RV604	
RV601	3000 ±30 Hz
RV603	

beginning and the ending of normal speed). Confirm that V playback mode as well.

rd



ut levels of the hem should be

stment. After in NOR play-

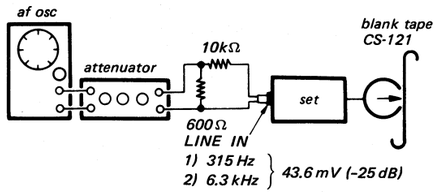
ghtening direc-

Record Bias Adjustment

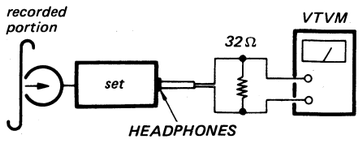
Setting:
GEQ: mechanical mid
FUNCTION: TAPE (RADIO OFF)

Procedure:

1. Mode: record

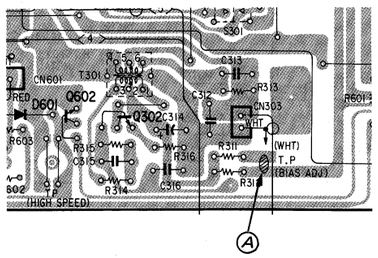


2. Mode: playback



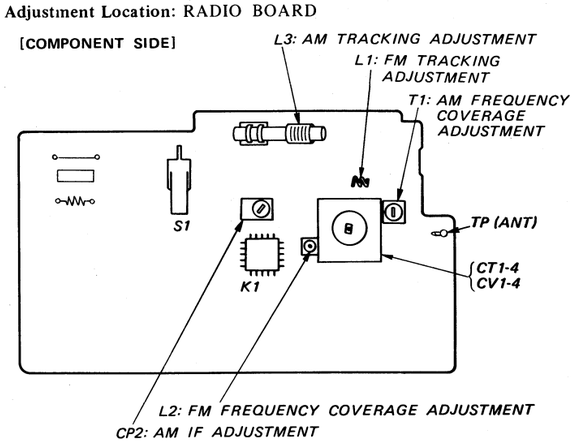
3. Confirm that the 6.3 kHz playback signal level is 0 ±3 dB relative to the 315 Hz signal.
If the above specification is not met, put or remove a solder bridge at the portion (A).

Adjustment Location: PRE MD BOARD
(Conductor side)



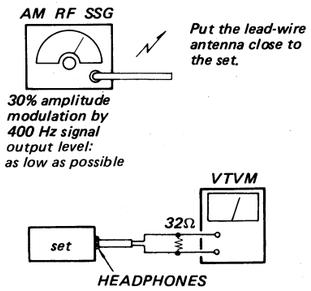
Adjustment Location: RADIO BOARD

[COMPONENT SIDE]



AM SECTION

FUNCTION switch: RADIO
BAND switch: AM



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

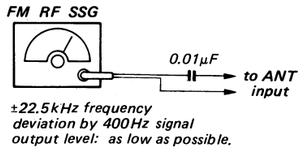
AM IF ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CP2	455 kHz

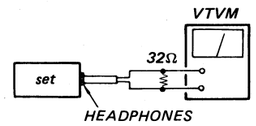
AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT4	1,685 kHz (AEP, E, Saudi Arabia Models) 1,630 kHz (Italian Model)
T1	518 kHz (AEP, E, Saudi Arabia Models) 516 kHz (Italian Model)

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
CT3	1,400 kHz
L3	620 kHz

FM SECTION

FUNCTION switch: RADIO
BAND switch: FM
FM MODE switch: MONO (E, Saudi Arabia Models)



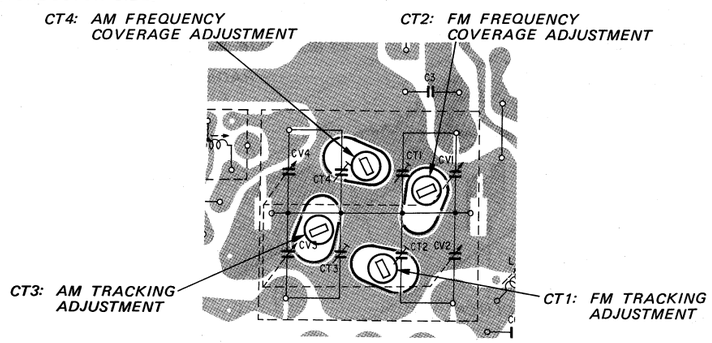


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT				
Adjust for a maximum reading on VTVM.	AEP Model	Italian Model	E Model	Saudi Arabia Model
CT2	107.8 MHz	108.3 MHz	109.5 MHz	107.8 MHz
L2	87.3 MHz	87.35 MHz	86.5 MHz	87.35 MHz

FM TRACKING ADJUSTMENT				
Adjust for a maximum reading on VTVM.	AEP Model	Italian Model	E Model	Saudi Arabia Model
CT2	107.8 MHz	108.3 MHz	109.5 MHz	107.8 MHz
L2	87.3 MHz	87.35 MHz	86.5 MHz	87.35 MHz

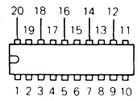
[CONDUCTOR SIDE]


CT4: AM FREQUENCY COVERAGE ADJUSTMENT
CT2: FM FREQUENCY COVERAGE ADJUSTMENT
CT3: AM TRACKING ADJUSTMENT
CT1: FM TRACKING ADJUSTMENT

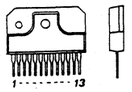
SECTION 4
DIAGRAMS

4-1. SEMICONDUCTOR LEAD LAYOUTS

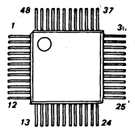
CXA1115BP
M5243P06



LA4597



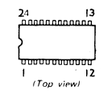
CX20029



2SB1013
2SC2001

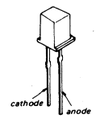
2SD773

CXA1116S



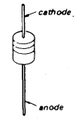
M5218P

SLP153B



RN1206
2SC3899
2SC3901
2SC4048
2SC634SP
2SD1012

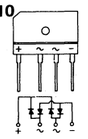
RD6.8ES-B2
1SS119



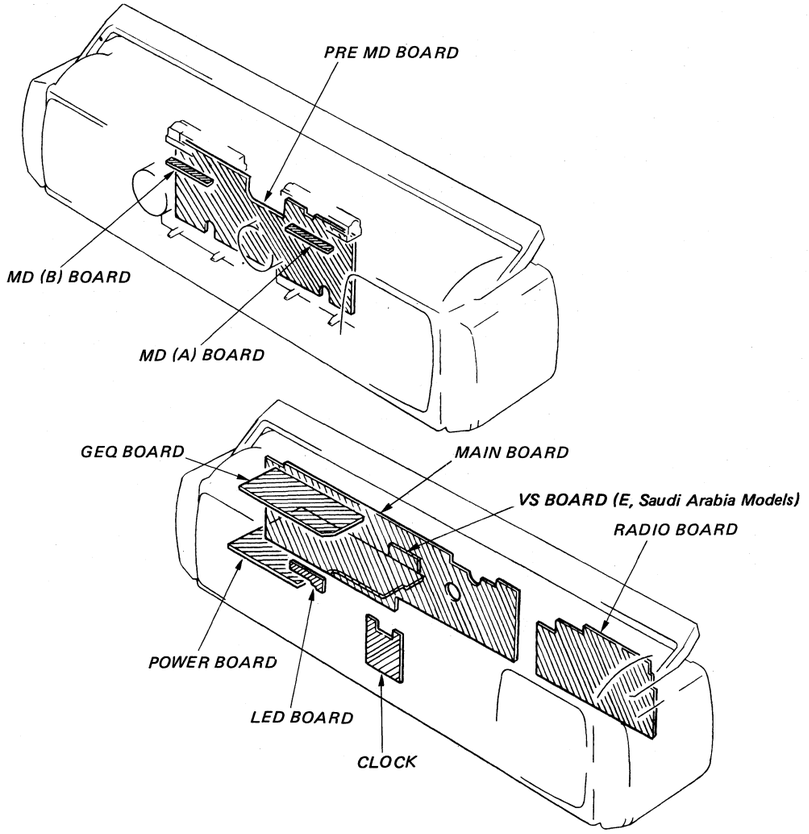
BA3707

2SK105A-30

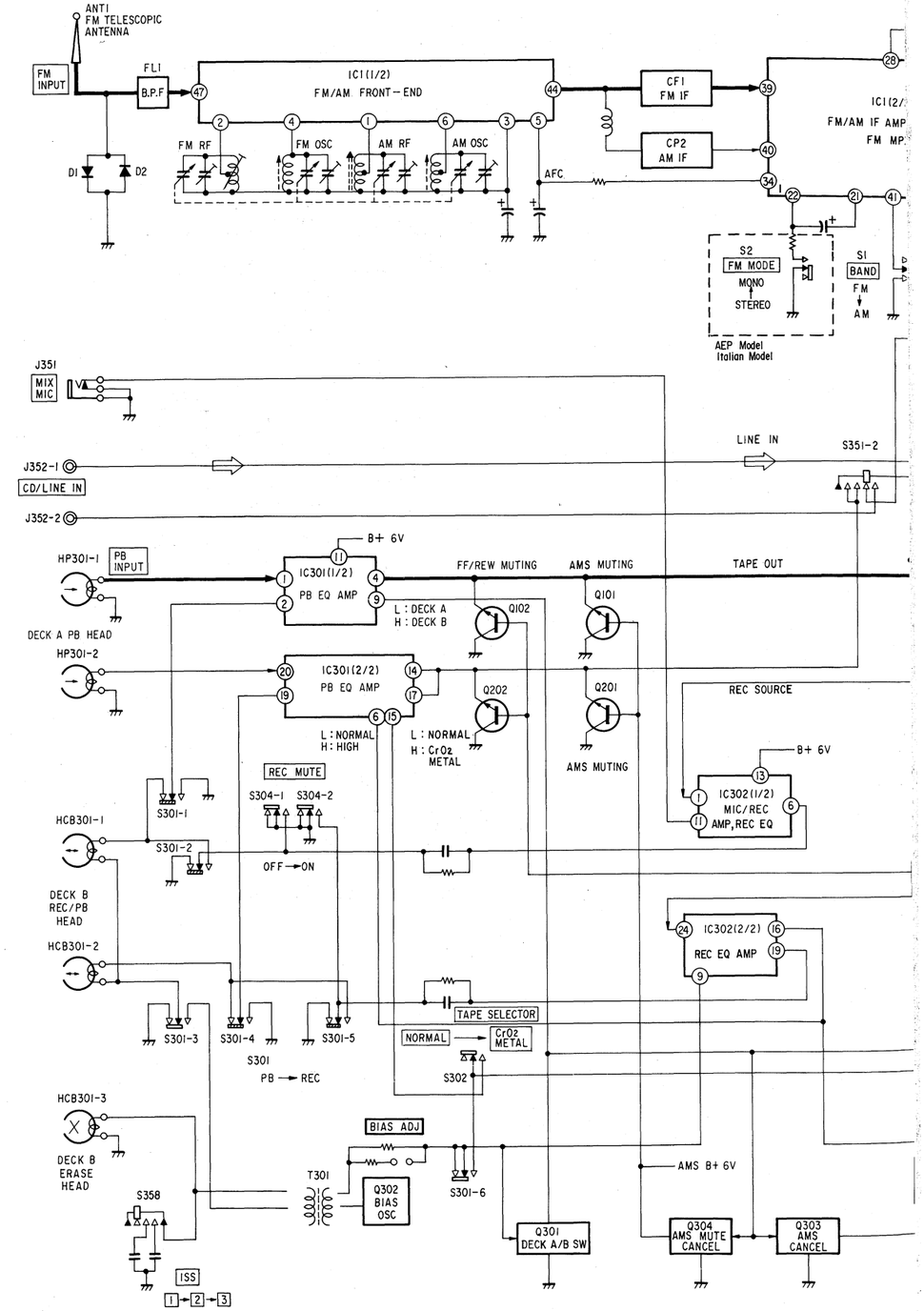
D3SBA10

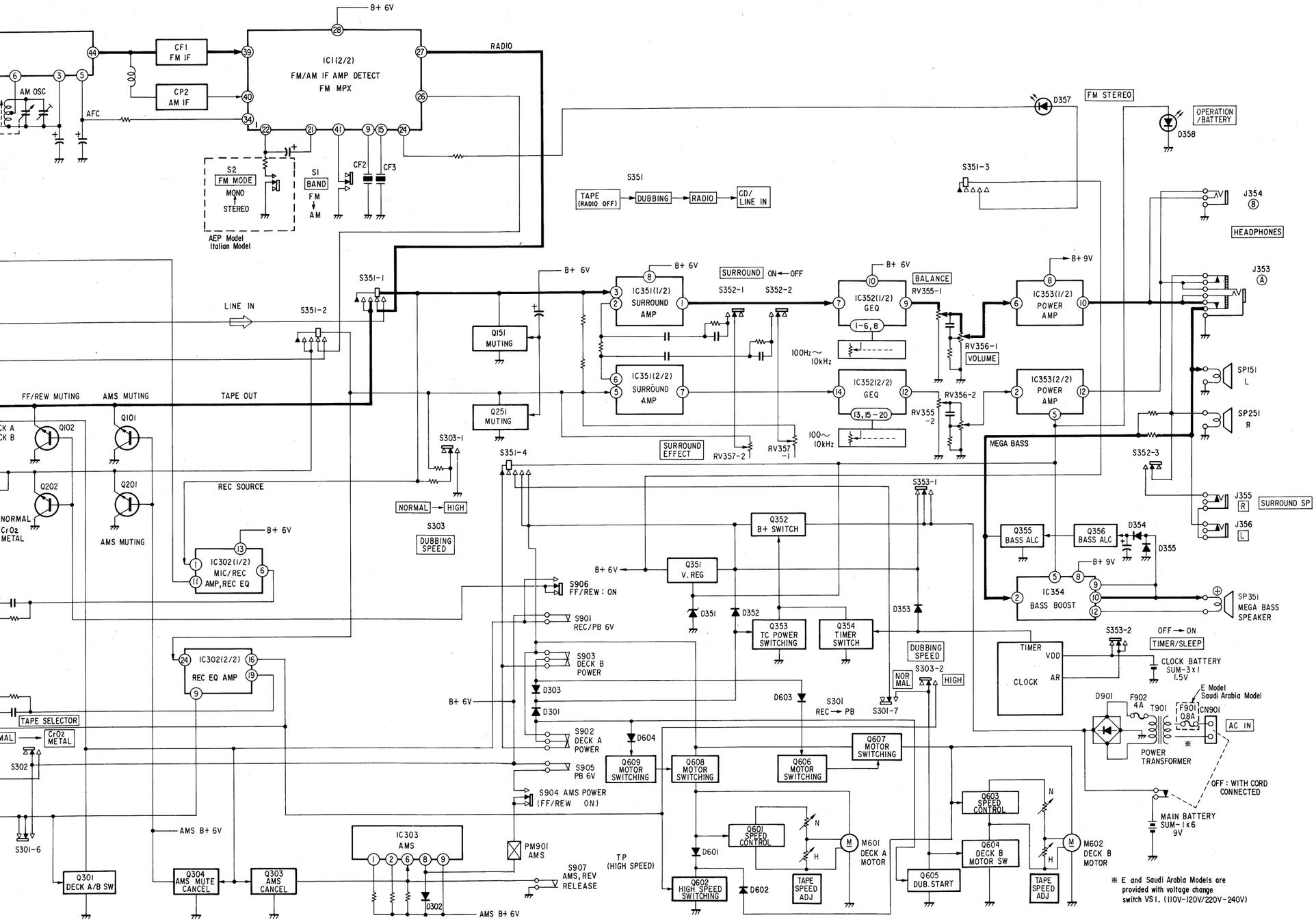


4-2. CIRCUIT BOARDS LOCATION



4-3. BLOCK DIAGRAM



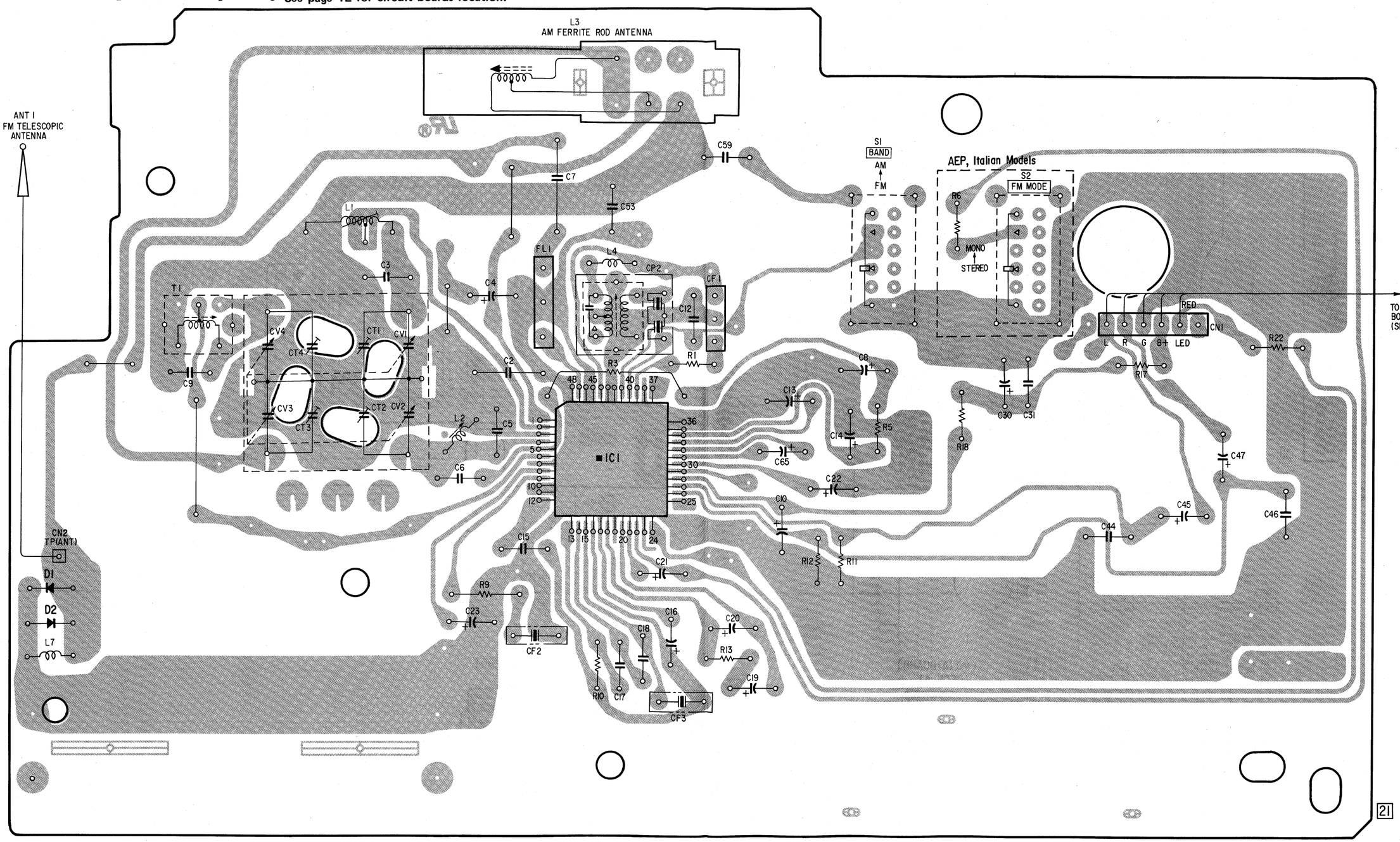

B+ 6V
CF1 FM IF
CP2 AM IF
IC1(2/2) FM/AM IF AMP DETECT FM MPX
RADIO
AM OSC
AFC
S2 FM MODE MONO STEREO
S1 BAND FM AM
CF2
CF3
AEP Model Italian Model
S351
TAPE (RADIO OFF)
DUBBING
RADIO
CD/ LINE IN
D357
FM STEREO
D358
OPERATION /BATTERY
S351-3
J354 (B)
HEADPHONES
J353 (A)
S351-1
LINE IN
S351-2
Q151 MUTING
Q251 MUTING
IC351(1/2) SURROUND AMP
IC351(2/2) SURROUND AMP
SURROUND
ON ← OFF
S352-1
S352-2
IC352(1/2) GEQ
IC352(2/2) GEQ
BALANCE
RV355-1
RV356-1 VOLUME
RV356-2
RV355-2
100Hz ~ 10kHz
100 ~ 10kHz
IC353(1/2) POWER AMP
IC353(2/2) POWER AMP
B+ 9V
SP151 L
SP251 R
FF/REW MUTING
AMS MUTING
TAPE OUT
Q102
Q101
Q202
Q201
NORMAL CrO2 METAL
AMS MUTING
REC SOURCE
S303-1
S303 DUBBING SPEED
NORMAL → HIGH
SURROUND EFFECT
RV357-2
RV357-1
S351-4
MEGA BASS
S352-3
S353-1
IC302(1/2) MIC/REC AMP, REC EQ
Q352 B+ SWITCH
Q355 BASS ALC
Q356 BASS ALC
D354
D355
J355 (R) SURROUND SP
J356 (L)
Q351 V. REG
S906 FF/REW: ON
S901 REC/PB 6V
D351
D352
D353
Q353 TC POWER SWITCHING
Q354 TIMER SWITCH
IC354 BASS BOOST
SP351 MEGA BASS SPEAKER
S353-2
OFF → ON
TIMER/SLEEP
TIMER
VDD
CLOCK
AR
CLOCK BATTERY SUM-3 x 1 1.5V
DUBBING SPEED
S303-2
NOR MAL
HIGH
IC302(2/2) REC EQ AMP
S903 DECK B POWER
D303
D301
D603
S301 REC → PB
S301-7
E Model Saudi Arabia Model
D901
F902 4A
T901
F901 0.8A
CN901
AC IN
POWER TRANSFORMER
※
OFF : WITH CORD CONNECTED
MAIN BATTERY SUM-1 x 6 9V
TAPE SELECTOR
CrO2 METAL
S302
S902 DECK A POWER
S905 PB 6V
D604
Q609 MOTOR SWITCHING
Q608 MOTOR SWITCHING
Q606 MOTOR SWITCHING
Q607 MOTOR SWITCHING
S904 AMS POWER (FF/REW ON)
Q603 SPEED CONTROL
Q604 DECK B MOTOR SW
Q605 DUB.START
M602 DECK B MOTOR
S301-6
AMS B+ 6V
IC303 AMS
PM901 AMS
S907 AMS, REV RELEASE
TP (HIGH SPEED)
Q601 SPEED CONTROL
D601
Q602 HIGH SPEED SWITCHING
D602
TAPE SPEED ADJ
M601 DECK A MOTOR
Q301 DECK A/B SW
Q304 AMS MUTE CANCEL
Q303 AMS CANCEL
D302
※ E and Saudi Arabia Models are provided with voltage change switch VS1. (110V-120V/220V-240V)

4-4. PRINTED WIRING BOARD

– Radio Section –

【RADIO BOARD】

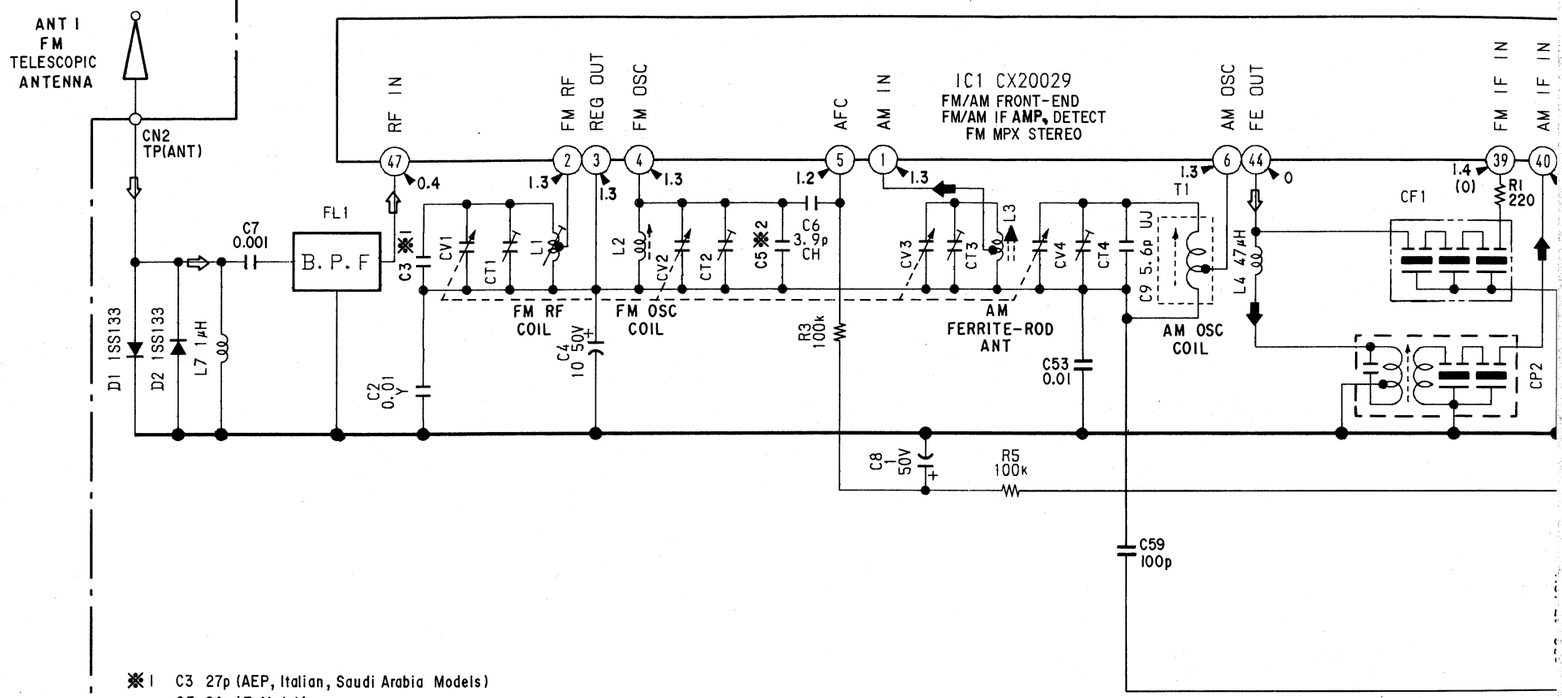
- See page 12 for semiconductor lead layouts.
- See page 12 for circuit boards location.



4-5. SCHEMATIC DIAGRAM

– Radio Section –

【RADIO BOARD】

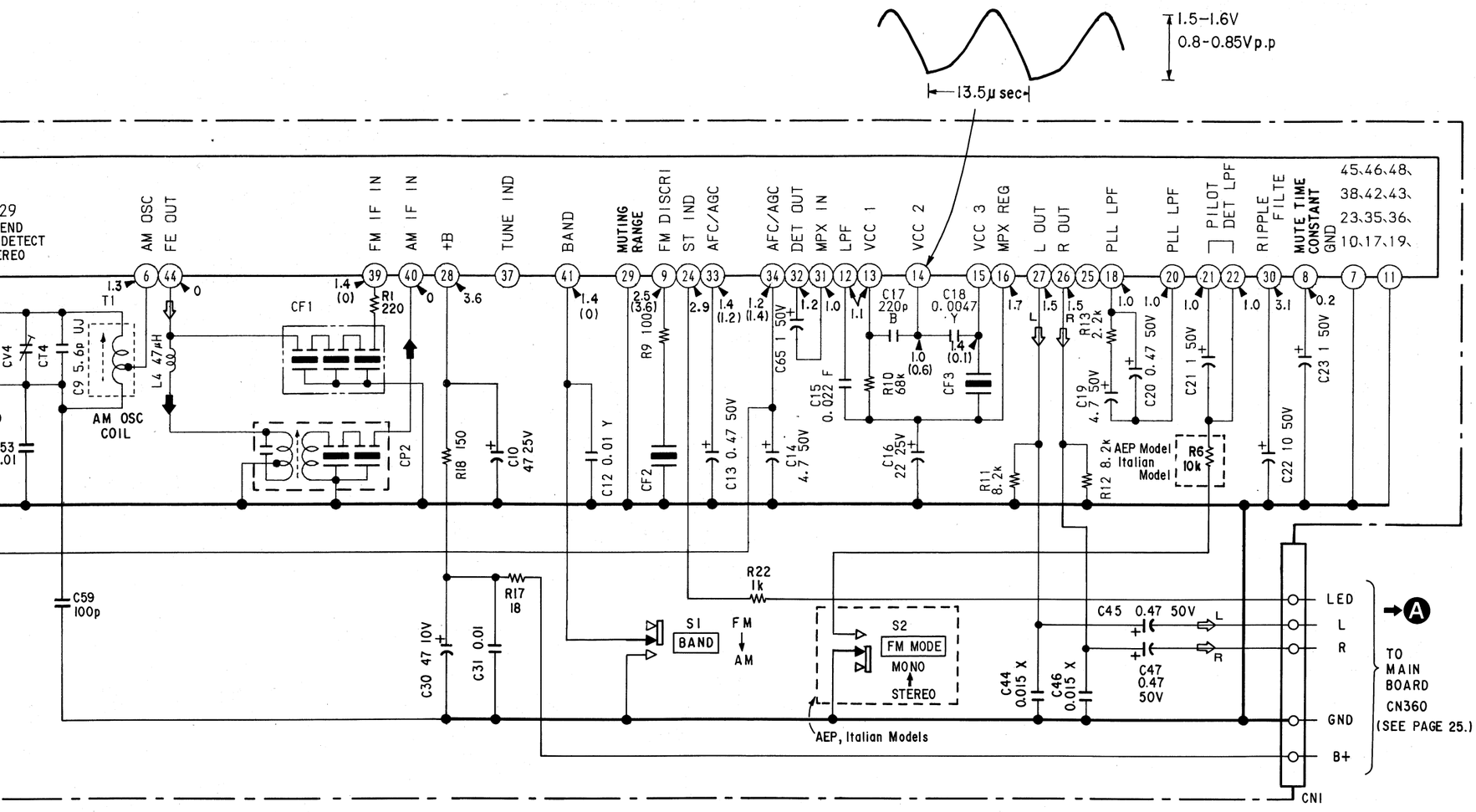


※1 C3 27p (AEP, Italian, Saudi Arabia Models)
C3 24p (E Model)
※2 C5 24p (Italian, Saudi Arabia Models)
C5 20p (AEP, E Models)

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Power voltage is dc 9 V and fed with regurated dc power supply from battery terminal.
- Voltage and waveforms are dc with respect to ground under no signal (detuned) condiction.
  no mark: FM
  ( ) : AM
- Voltages are taken
  Voltage variations
  tion tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM

8 9 10 11 12 13 14 15 16 17 18 19



dc 9 V and fed with regurated dc power
ery terminal.
veforms are dc with respect to ground
detuned) condiction.

- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM

- Switches:

Ref. No.	Description	Position
S1	BAND	FM
S2	FM MODE	STEREO

4-6. PRINTED WIRING BOARDS

–Main Section–

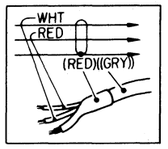
- **See page 12 for semiconductor lead layouts.**
- **See page 12 for circuit boards location.**

- **Semiconductor Location**

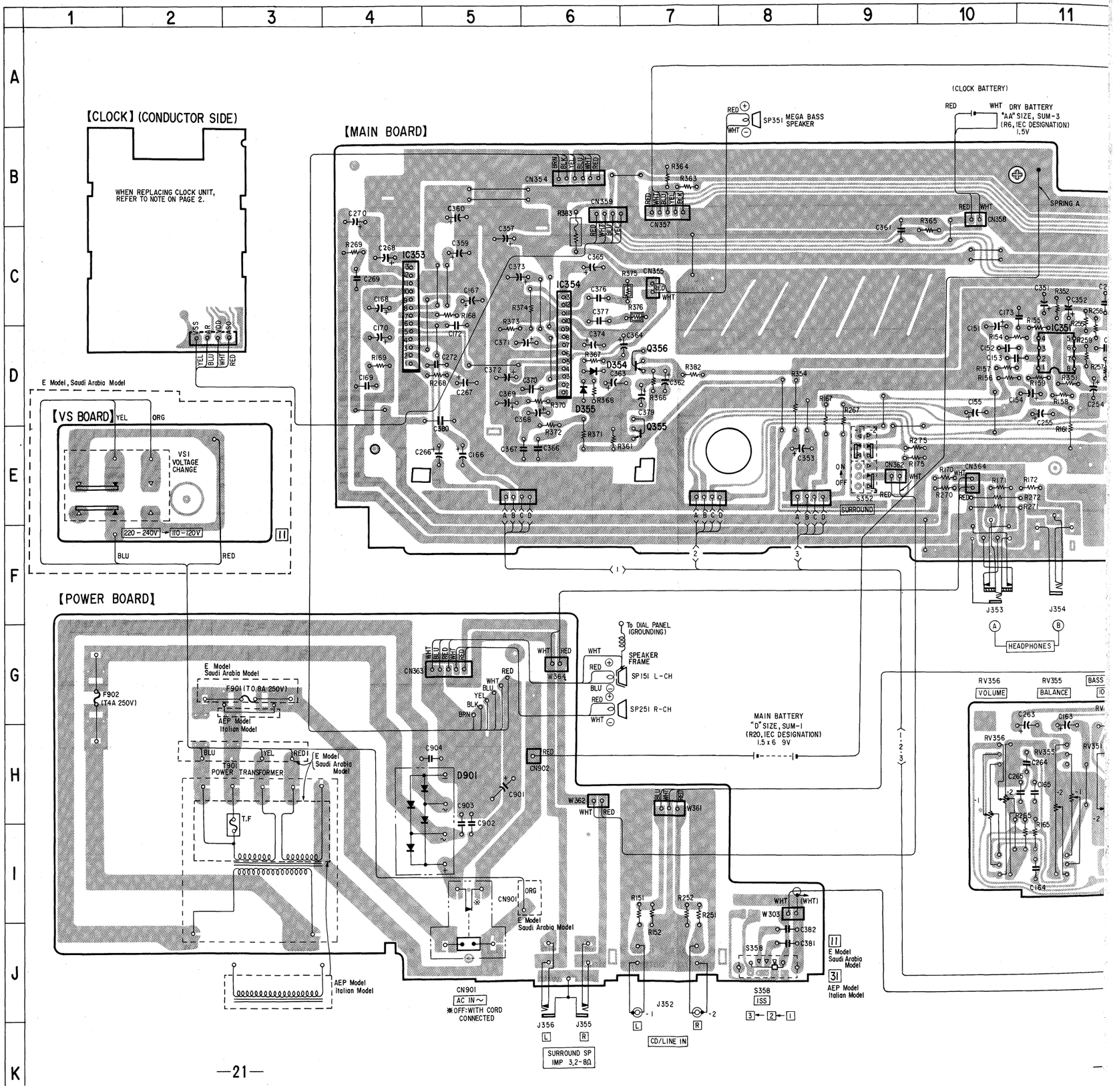
Ref. No.	Location	Ref. No.	Location
D101	D-20	Q101	B-21
D102	D-20	Q102	C-22
D201	B-20	Q151	E-14
D202	B-20	Q201	C-21
D301	E-18	Q202	C-22
D302	D-18	Q251	D-13
D303	E-18	Q301	D-25
D351	D-14	Q302	F-21
D352	D-13	Q303	C-19
D353	E-12	Q304	B-21
D354	D-6	Q351	D-14
D355	D-6	Q352	E-12
D357	A-14	Q353	D-12
D358	A-12	Q354	D-12
D601	E-20	Q355	E-7
D602	E-19	Q356	D-7
D603	E-18	Q601	F-19
D604	F-24	Q602	E-20
D901	H-5	Q603	F-18
		Q604	E-19
IC301	C-26	Q605	E-19
IC302	C-21	Q606	F-18
IC303	C-18	Q607	E-18
IC351	D-11	Q608	E-23
IC352	H-14	Q609	E-23
IC353	C-4		
IC354	C-6		

Note:

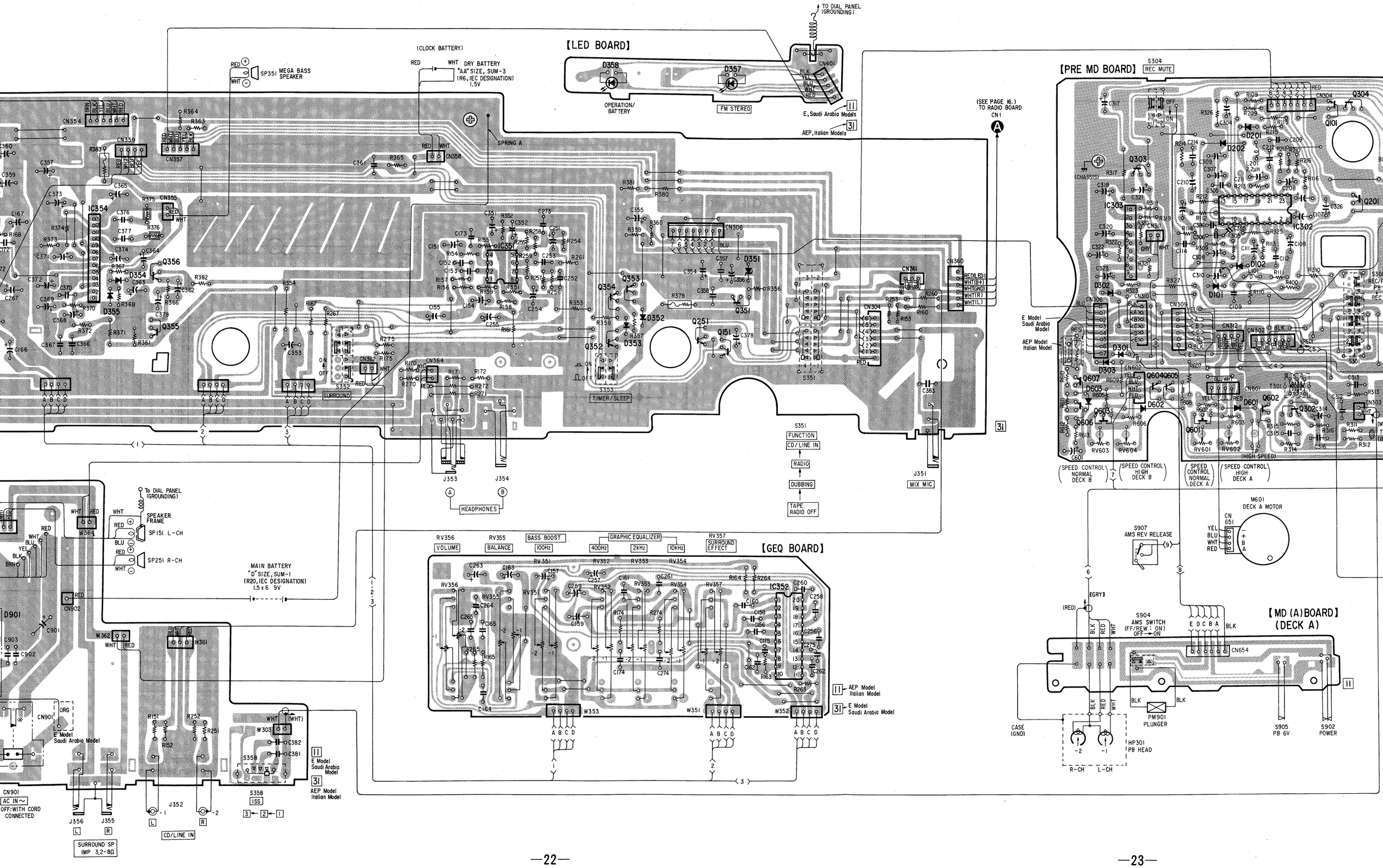
- Color code of sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.
- ●—— : parts extracted from the conductor side.



5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21


【LED BOARD】
【PRE MD BOARD】
【GEQ BOARD】
【MD (A)BOARD】
(DECK A)
(CLOCK BATTERY)
DRY BATTERY
"AA" SIZE, SUM-3
(R6, IEC DESIGNATION)
1.5V
SP351 MEGA BASS SPEAKER
SP151 L-CH
SP251 R-CH
SPEAKER FRAME
MAIN BATTERY
"D" SIZE, SUM-1
(R20, IEC DESIGNATION)
1.5 x 6 9V
TO DIAL PANEL (GROUNDING)
SPRING A
OPERATION/ BATTERY
FM STEREO
E, Saudi Arabia Models
AEP, Italian Models
(SEE PAGE 16.) TO RADIO BOARD CN1
S304 REC MUTE
E Model Saudi Arabia Model
AEP Model Italian Model
S351 FUNCTION
CD/LINE IN
RADIO
DUBBING
TAPE RADIO OFF
TIMER/SLEEP
SURROUND
HEADPHONES
J351 MIX MIC
RV356 VOLUME
RV355 BALANCE
BASS BOOST 100Hz
GRAPHIC EQUALIZER 400Hz 2kHz 10kHz
RV357 SURROUND EFFECT
S907 AMS REV RELEASE
S904 AMS SWITCH (FF/REW : ON) OFF → ON
M601 DECK A MOTOR
CN 651
PM901 PLUNGER
HP301 PB HEAD
S905 PB 6V
S902 POWER
CASE (GND)
R-CH L-CH
(SPEED CONTROL NORMAL DECK B)
(SPEED CONTROL HIGH DECK B)
(SPEED CONTROL NORMAL DECK A)
(SPEED CONTROL HIGH DECK A)
(HIGH SPEED)
(BIAS ADJ)
CN901 AC IN ~
OFF: WITH CORD CONNECTED
J352 CD/LINE IN
J353
J354
J355
J356
SURROUND SP IMP 3.2-8Ω
S358 ISS
W303
W351
W352
W353
W361
W362
W364
CN354
CN355
CN357
CN358
CN359
CN360
CN361
CN362
CN364
CN401
CN902
CN306
CN304
CN309
CN310
CN312
CN303
CN601
CN602
CN654
IC354
IC303
IC302
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Q303
Q304
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Q201
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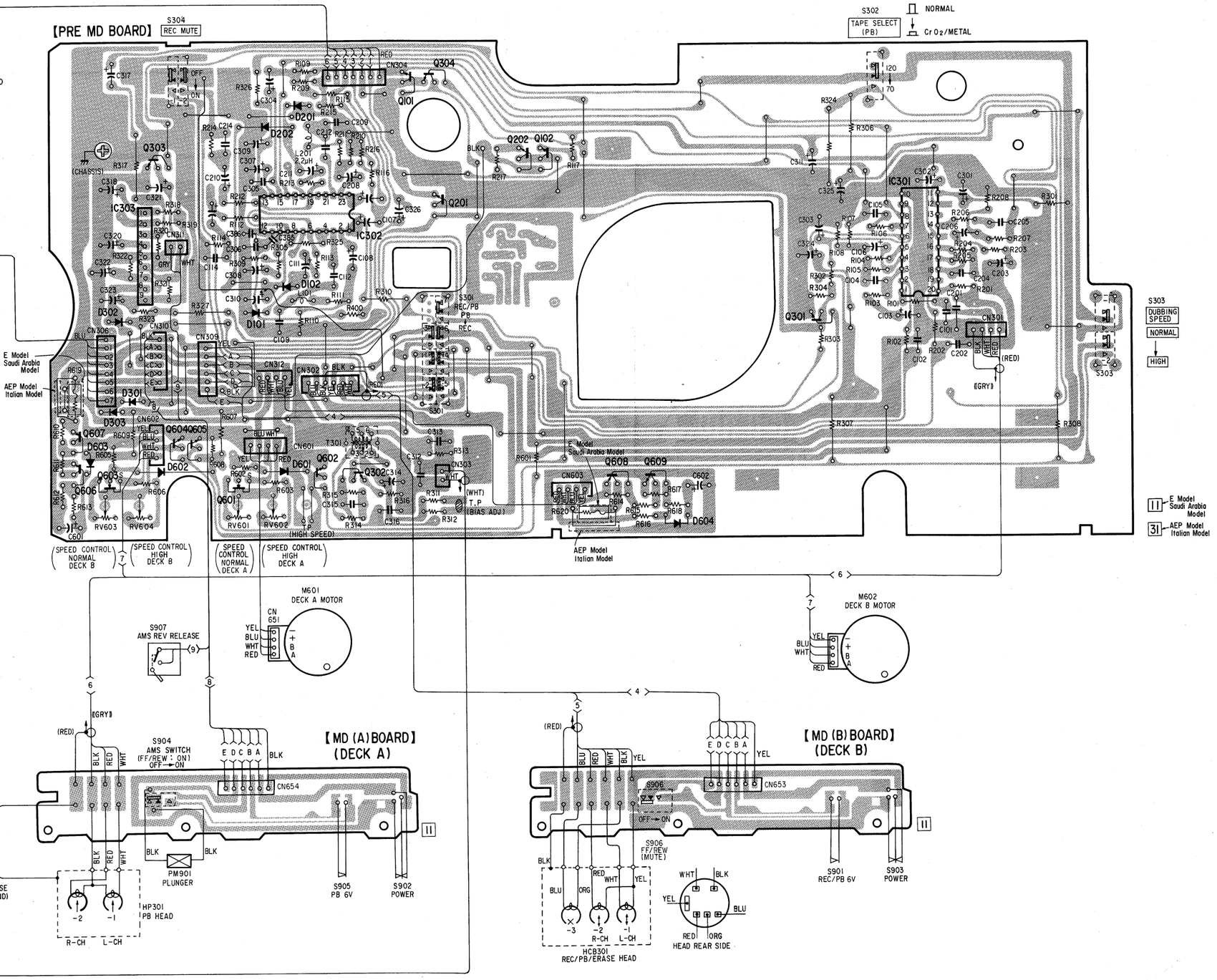
C352

18 19 20 21 22 23 24 25 26 27 28

【PRE MD BOARD】



4-7. SCHEMATIC DIAGRAM

—Main Section—

【MAIN BOARD】

【GEQ BOARD】

【PRE MD BOARD】

【POWER BOARD(2/3)】

【MD(A) BOARD (1/2)】

【MD(B) BOARD (1/2)】

【POWER BOARD (3/3)】

IC351 M5218P

IC352 GEQ

IC352 M5243P06

IC301 CXA1158P (1/2)

IC302 CXA1116S (1/2)

IC302 (2/2)

IC303 BA3707 AMS

IC301 PB EQ AMP

IC302 REC/MIC AMP, EQ

IC351 SURROUND AMP

Q151, 251 MUTING

Q301 A/B SELECT

Q303 AMS OFF

Q304 AMS OFF

Q351 REGULATOR

Q601 SPEED CONTROL

Q602 HIGH SPEED SWITCHING

Q603 SPEED CONTROL

Q604 HIGH SPEED SWITCHING

Q605 SYNCHRO SWITCHING

Q606,607 608,609 MOTOR SWITCHING

Q101, 201 AMS MUTE

Q102, 202 FF/REW MUTE

S301 PB → REC

S302 TAPE SELECT(PB) NORMAL → CrO_2 METAL

S303 DUBBING SPEED NORMAL → HIGH

S304 REC MUTE OFF → ON

S351 FUNCTION TAPE → DUBBING → RADIO → CD/LINE IN

S352 SURROUND OFF → ON

BIAS ADJ

BIAS OSC

SURROUND EFFECT

BASS BOOST

GRAPHIC EQUALIZER

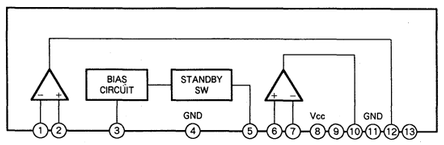
E, Saudi Arabia Models

AEP, Italian Models

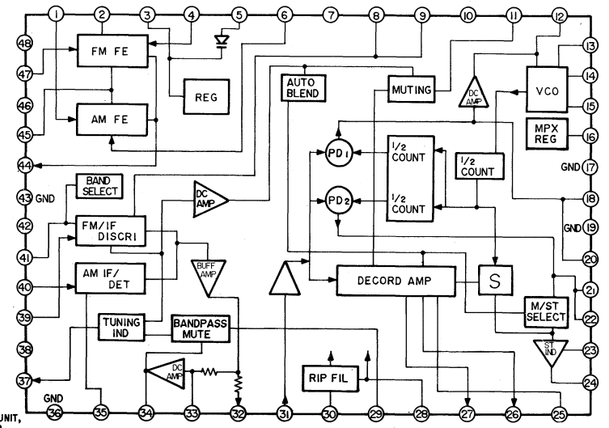
TP(HIGH SPEED)

A TO RADIO BOARD CN1 (SEE PAGE 19.)

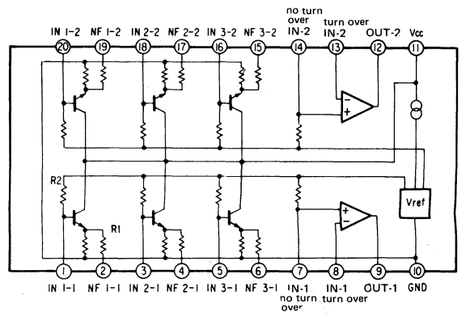
IC353, 354 LA4597

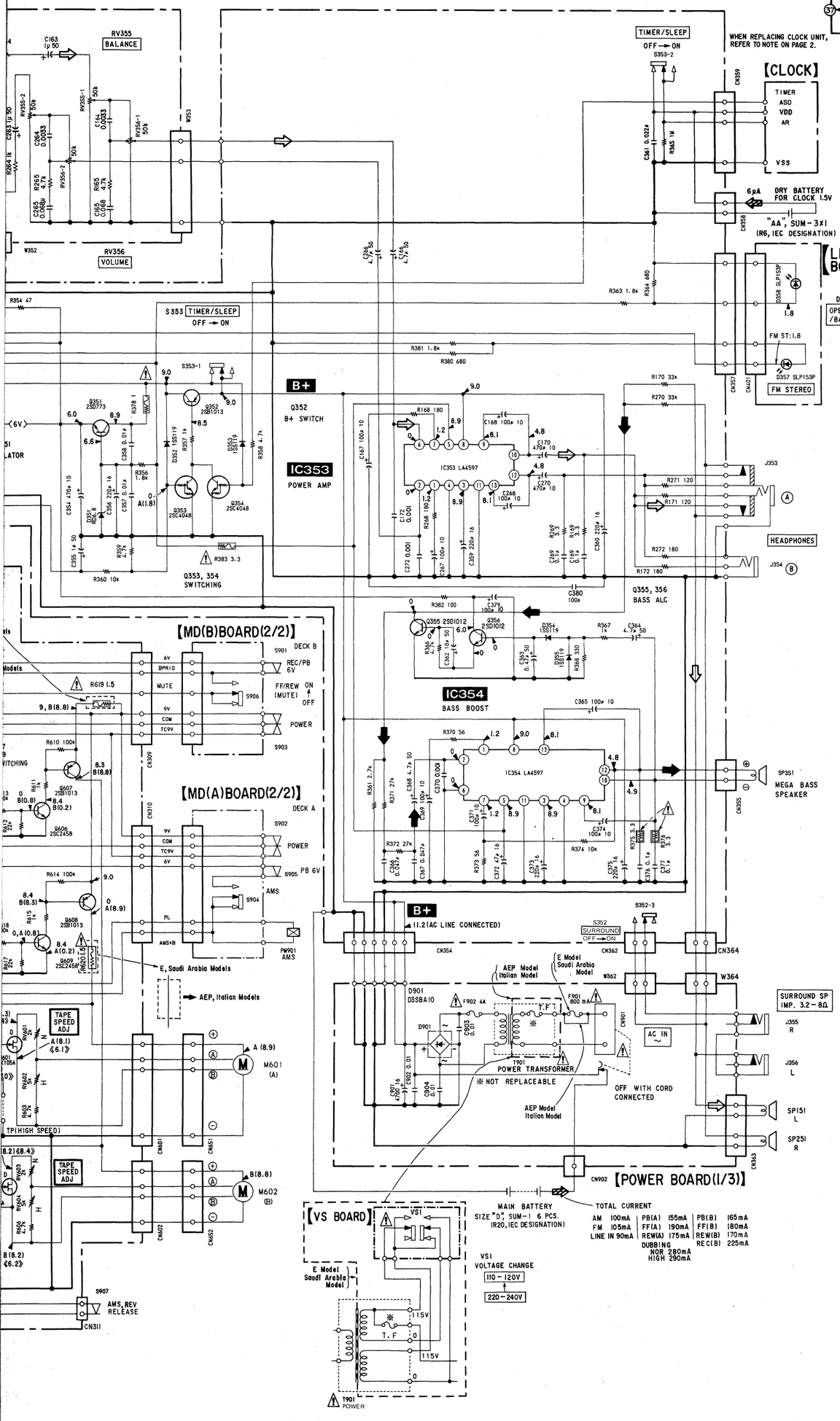


IC1 CX20029



IC352 M5243P06





Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ⏦ : fusible resistor.
- Switch with sliding contact indicated by hatched lines shows shorting type.

- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
  no mark: FM
  B < >: REC
  ≪≫: High speed
  A ( ): Playback (DECK A)
  B ( ): Playback (DECK B)
- Signal path.
  ⇨ : RADIO
  ⇒ : PB (DECK A) L-CH
  ⇛ : REC (DECK B) L-CH
  ➡ : MEGA BASS
- Switches:

Ref. No.	Description	Position
S301	REC/PB	PB
S302	TAPE SELECT (PB)	NORMAL
S303	DUBBING SPEED	NORMAL
S304	REC MUTE	OFF
S351	FUNCTION	TAPE
S352	SURROUND	OFF
S353	TIMER/SLEEP	OFF
S358	ISS	1
S901	POWER 6V	OFF
S902	POWER DECK A	OFF
S903	POWER DECK B	OFF
S904	AMS	OFF
S905	POWER 6V	OFF
S906	FF/REW (DECK B)	OFF
S907	AMS, REV RELEASE	OFF

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

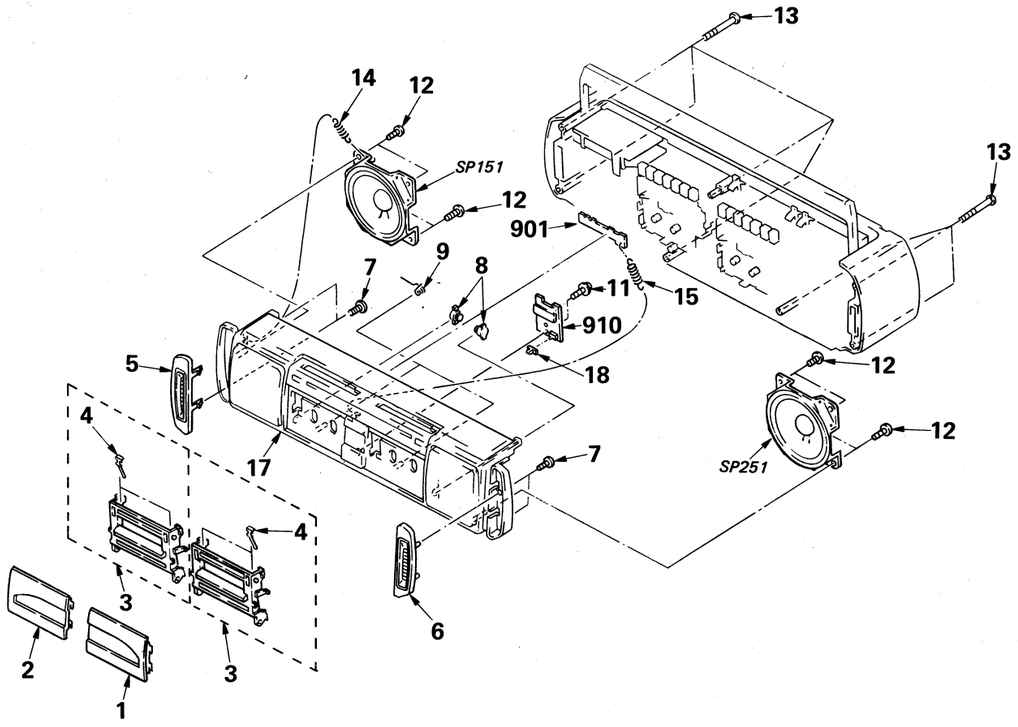
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

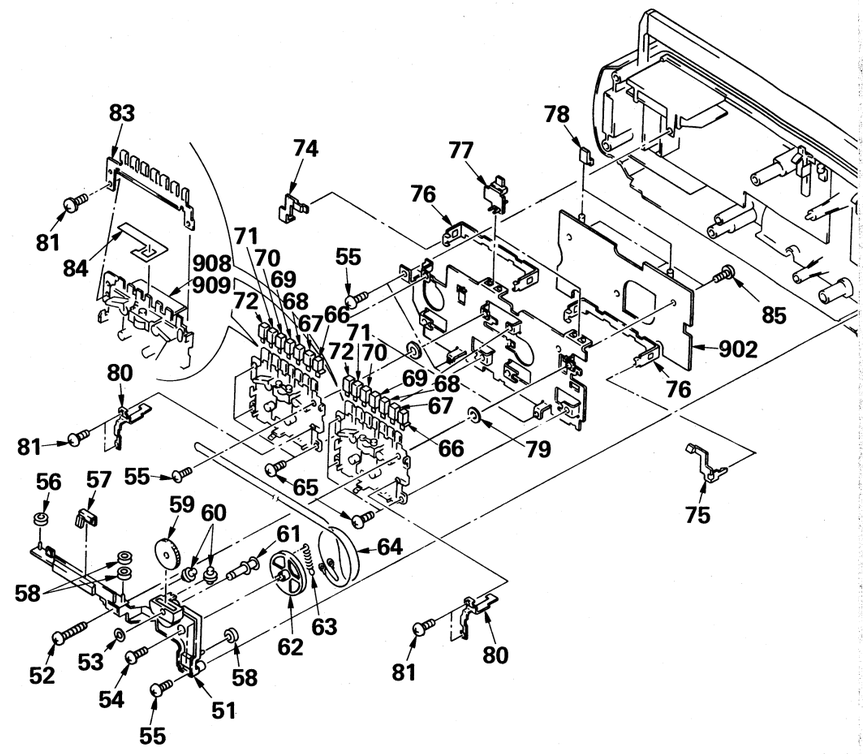
1. CABINET



No.	Part No.	Description	Remarks
1	3-344-010-01	WINDOW (A), CASSETTE	
2	3-344-011-01	WINDOW (B), CASSETTE	
3	A-3247-296-A	HOLDER ASSY, CASSETTE	
4	3-308-823-01	SPRING	
5	3-344-013-11	ORNAMENT (LEFT), DUCT	
6	3-344-014-11	ORNAMENT (RIGHT), DUCT	
7	7-685-135-19	SCREW (M2.6X10), TAPPING, + BV	
8	3-319-224-11	DAMPER, SMALL	
9	3-344-744-01	SPRING (HOLDER)	
11	7-687-233-11	SCREW (+ PTPWH) (2.6X6)	
12	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
13	3-334-187-11	SCREW (3X50), TAPPING, + BV	
14	3-642-562-11	SPRING, TENSION	
15	3-539-226-11	SPRING, TENSION	

No.	Part No.	Description	Remarks
17	X-3344-125-1	(AEP).....CABINET (FRONT)	
	X-3344-126-1	(Italian).....CABINET (FRONT)	
	X-3344-127-1	(E).....CABINET (FRONT)	
	X-3344-128-1	(Saudi Arabia)...CABINET (FRONT)	
18	3-338-215-11	KNOB	
901	*1-624-717-31	(AEP,Italian).....PC BOARD, LED	
	*1-627-788-11	(E,Saudi Arabia)...PC BOARD, LED	
910	1-548-145-12	CLOCK (LIQUID CRYSTAL PANEL)	
SP151	1-503-760-11	SPEAKER	
SP251	1-503-760-11	SPEAKER	

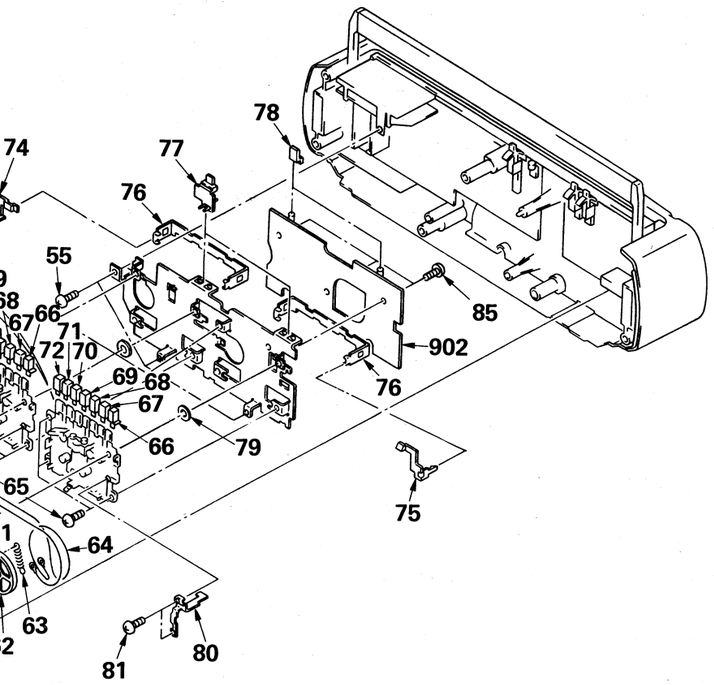
2. GENERAL (1)



No.	Part No.	Description	Remarks
51	*3-344-005-01	CHASSIS (T)	
52	7-685-552-14	SCREW +BTP 3X25 TYPE2 N-S	
53	3-338-266-01	WASHER, STOPPER	
54	7-621-770-87	SCREW +B 2.6X5	
55	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
56	3-817-114-00	PULLEY P8	
57	3-344-015-01	POINTER	
58	3-304-109-00	PULLEY	
59	3-338-214-01	KNOB, TUNING	
60	3-564-506-00	PULLEY (A)	
61	*3-338-213-01	SHAFT, TUNING	
62	4-922-808-01	DRUM, DIAL	
63	3-325-694-01	SPRING, TENSION	
64	A-3244-269-A	STRING ASSY, DIAL	
65	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
66	3-344-028-01	BUTTON (DIR)	
67	3-344-027-01	BUTTON (REC)	
68	3-344-026-01	BUTTON (PLAY)	
69	3-344-025-01	BUTTON (REW)	

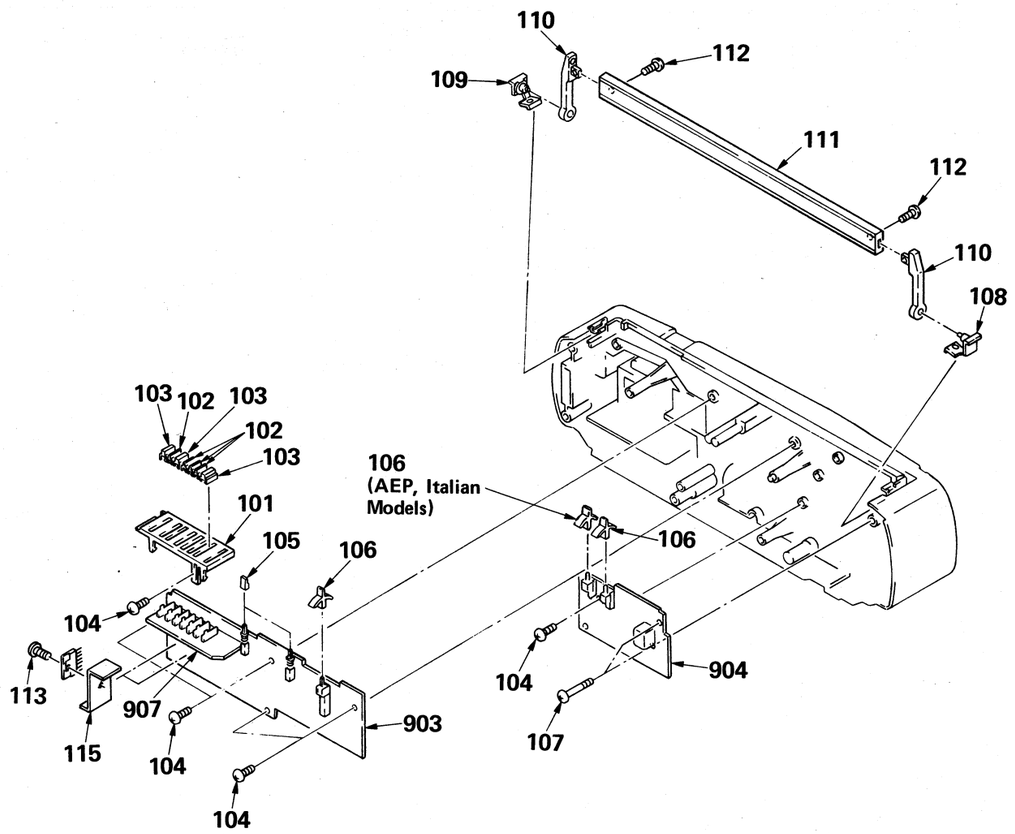
No.	Part No.	Description	Remarks
70	3-344-024-01	BUTTON (FF)	
71	3-344-023-01	BUTTON (PAUSE)	
72	3-344-022-01	BUTTON (S/E)	
74	*3-344-019-01	LEVER (INDICATION B)	
75	*3-344-018-01	LEVER (INDICATION A)	
76	*3-344-020-01	SLIDER (INDICATION)	
77	3-344-017-01	KNOB (DIR)	
78	3-344-016-01	BUTTON (PUSH)	
79	3-344-781-01	WASHER, POLYETHYLENE	
80	*3-344-003-01	LEVER (REC)	
81	3-344-727-01	SCREW (B2), TAPPING, HE	
83	*3-344-723-01	GUIDE, BUTTON	
84	*3-344-752-01	PAPER (HD), SHIELD	
85	7-685-646-79	SCREW +BVTP 3X8 TYPE2	
902	*A-3260-798-A	(AEP,Italian).....MOUN	
	*A-3260-799-A	(E,Saudi Arabia)...MOUN	
908	*1-624-735-11	PC BOARD, MD (A)	
909	*1-624-734-11	PC BOARD, MD (B)	

CFS-DW80



Remarks	No.	Part No.	Description	Remarks
	70	3-344-024-01	BUTTON (FF)	
N-S	71	3-344-023-01	BUTTON (PAUSE)	
	72	3-344-022-01	BUTTON (S/E)	
	74	*3-344-019-01	LEVER (INDICATION B)	
IT-3	75	*3-344-018-01	LEVER (INDICATION A)	
	76	*3-344-020-01	SLIDER (INDICATION)	
	77	3-344-017-01	KNOB (DIR)	
	78	3-344-016-01	BUTTON (PUSH)	
	79	3-344-781-01	WASHER, POLYETHYLENE	
	80	*3-344-003-01	LEVER (REC)	
	81	3-344-727-01	SCREW (B2), TAPPING, HEAD	
	83	*3-344-723-01	GUIDE, BUTTON	
	84	*3-344-752-01	PAPER (HD), SHIELD	
	85	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
IT-3	902	*A-3260-798-A	(AEP,Italian).....MOUNTED PCB, PRE MD	
		*A-3260-799-A	(E,Saudi Arabia)...MOUNTED PCB, PRE MD	
	908	*1-624-735-11	PC BOARD, MD (A)	
	909	*1-624-734-11	PC BOARD, MD (B)	

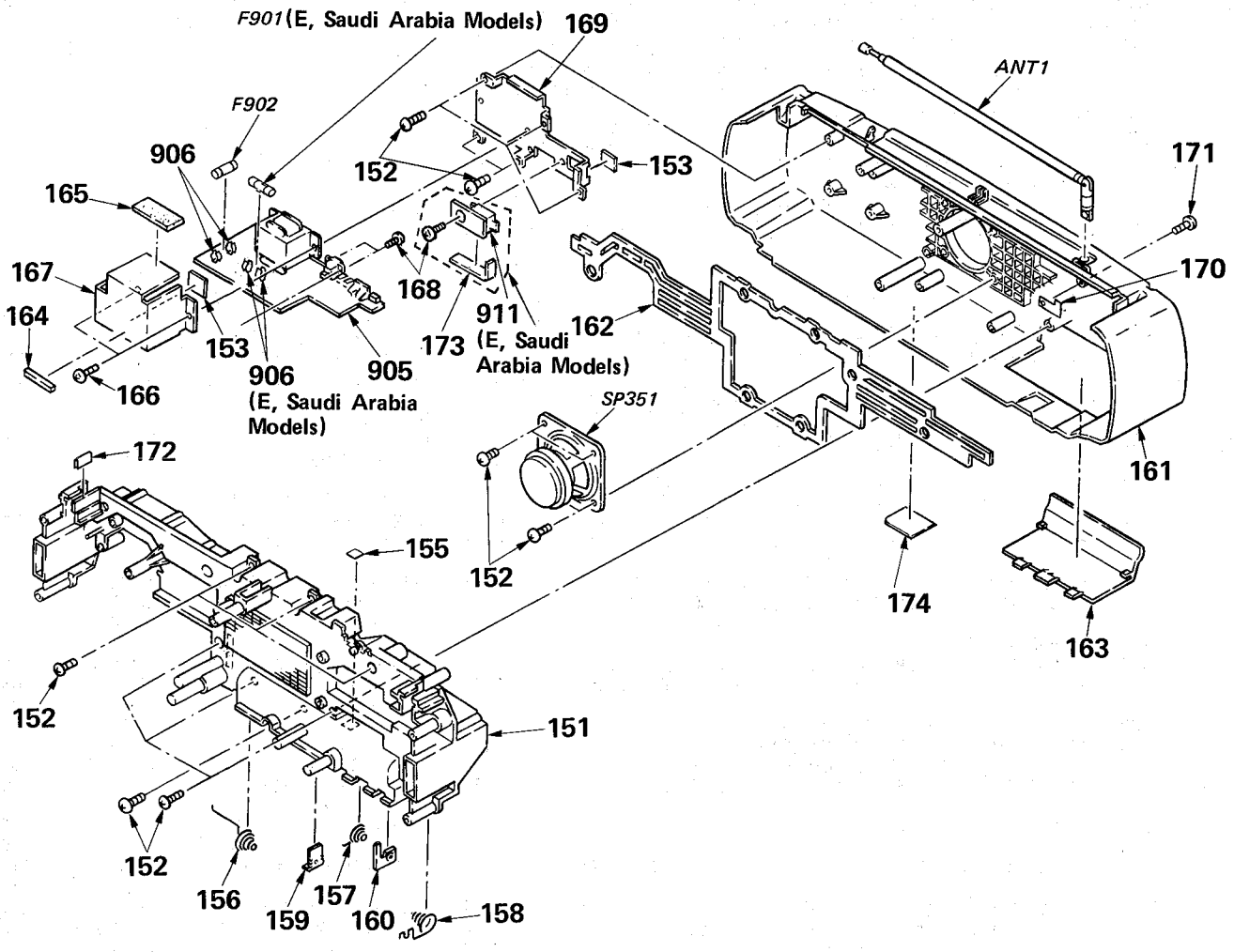
3. GENERAL (2)



No.	Part No.	Description	Remarks
101	*3-344-006-01	CHASSIS (GEQ)	
102	3-338-234-01	KNOB, GEQ	
103	3-338-235-01	KNOB, VOL	
104	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
105	3-336-811-01	PUSH BUTTON	
106	3-323-803-11	KNOB, BAND SELECTION	
107	3-846-072-00	SCREW (3X48), TAPPING, + BV	
108	3-338-204-01	COVER (RIGHT), FRICTION	
109	3-338-204-11	COVER (LEFT), FRICTION	
110	3-338-216-11	PLATE, SIDE, HANDLE	
111	3-338-207-31	HANDLE	

No.	Part No.	Description	Remarks
112	7-685-645-79	SCREW +BVTP 3X6 TYPE2 N-S	
113	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
115	*3-344-721-01	HEAT SINK	
903	*A-3260-782-A	MOUNTED PCB, MAIN	
904	*A-3216-515-A	(AEP).....PC BOARD ASSY, RADIO	
	*A-3216-516-A	(Italian).....PC BOARD ASSY, RADIO	
	*A-3216-517-A	(E).....PC BOARD ASSY, RADIO	
	*A-3216-613-A	(Saudi Arabia)...PC BOARD ASSY, RADIO	
907	*1-624-716-31	(AEP,Italian).....PC BOARD, G.E.Q	
	*1-627-787-11	(E,Saudi Arabia)...PC BOARD, G.E.Q	

4. GENERAL (3)



Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remarks
151	3-344-030-01	CHASSIS (D)	
152	7-685-647-79	SCREW +BVTP 3X10 TYPE 2 IT-3	
153	*4-871-306-01	RUBBER (A)	
155	3-831-441-XX	CUSHION (B)	
156	3-338-205-01	SPRING (A)	
157	3-338-210-01	SPRING	
158	4-918-245-01	SPRING	
159	3-338-224-01	TERMINAL BOARD (B), PLUS	
160	3-338-226-01	TERMINAL BOARD, PLUS	
161	3-344-031-21	(E,Saudi Arabia)...CABINET (REAR)	
	3-344-031-31	(AEP,Italian).....CABINET (REAR)	
162	*3-338-236-01	SHEET (D)	
163	3-338-227-21	LID, BATTERY CASE	
164	9-911-840-XX	CUSHION, RUBBER	
165	9-911-815-01	CUSHION	
166	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	

No.	Part No.	Description	Remarks
167	*3-338-228-01	CASE, SHIELD	
168	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
169	*3-344-001-01	BRACKET, TRANSFORMER	
170	*3-338-217-01	TERMINAL BOARD, ANTENNA	
171	7-682-549-04	SCREW +B 3X10	
172	4-871-306-01	CUSHION (A)	
173	3-348-605-01	(E,Saudi Arabia)...COVER (A)	
174	*3-344-777-01	(E,Saudi Arabia)...LABEL, MODEL NUMBER	
	*3-344-778-01	(AEP,Italian).....LABEL, MODEL NUMBER	
905	*1-624-714-31	(AEP,Italian).....PC BOARD, POWER	
	*1-627-764-11	(E,Saudi Arabia)...PC BOARD, POWER	
906	*1-533-189-11	HOLDER, FUSE	
911	*1-627-763-11	(E,Saudi Arabia)...PC BOARD, VS	
ANT1	1-501-204-00	ANTENNA, TELESCOPIC (FM)	
F901⚠	1-532-215-11	(E,Saudi Arabia)...FUSE, TIME-LAG, 0.8A	
F902⚠	1-532-350-00	FUSE, TIME-LAG, 4.0A	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
901	*1-624-717-31	(AEP,Italian).....PC BOARD, LED
	*1-627-788-11	(E,Saudi Arabia)...PC BOARD, LED
902	*A-3260-798-A	(AEP,Italian).....MOUNTED PCB, PRE MD
	*A-3260-799-A	(E,Saudi Arabia)...MOUNTED PCB, PRE MD
903	*A-3260-782-A	MOUNTED PCB, MAIN
904	*A-3216-515-A	(AEP).....PC BOARD ASSY, RADIO
	*A-3216-516-A	(Italian).....PC BOARD ASSY, RADIO
	*A-3216-517-A	(E).....PC BOARD ASSY, RADIO
	*A-3216-613-A	(Saudi Arabia)...PC BOARD ASSY, RADIO
905	*1-624-714-31	(AEP,Italian).....PC BOARD, POWER
	*1-627-764-11	(E,Saudi Arabia)...PC BOARD, POWER
906	*1-533-189-11	HOLDER, FUSE
907	*1-624-716-31	(AEP,Italian).....PC BOARD, G.E.Q
	*1-627-787-11	(E,Saudi Arabia)...PC BOARD, G.E.Q
908	*1-624-735-11	PC BOARD, MD (A)
909	*1-624-734-11	PC BOARD, MD (B)
910	1-548-145-12	CLOCK (LIQUID CRYSTAL PANEL)
911	*1-627-763-11	(E,Saudi Arabia)...PC BOARD, VS
ANT1	1-501-204-00	ANTENNA, TELESCOPIC (FM)
C2	1-161-379-00	CERAMIC 0.01MF 30% 16V
C3	1-162-208-31	(E)....CERAMIC 24PF 5% 50V
C3	1-162-209-31	(AEP,Italian,Saudi Arabia) ....CERAMIC 27PF 5% 50V
C4	1-123-875-11	ELECT 10MF 20% 50V
C5	1-102-804-99	(AEP,E)...CERAMIC 20PF 5% 50V
C5	1-102-960-00	(Italian,Saudi Arabia) ...CERAMIC 24PF 5% 50V
C6	1-162-194-31	CERAMIC 3.9PF 10% 50V
C7	1-162-294-31	CERAMIC 0.001MF 10% 50V
C8	1-124-499-11	ELECT 1MF 20% 50V
C9	1-162-196-31	CERAMIC 5.6PF 10% 50V
C10	1-124-446-11	ELECT 47MF 20% 10V
C12	1-161-379-00	CERAMIC 0.01MF 30% 16V
C13	1-124-902-00	ELECT 0.47MF 20% 50V
C14	1-124-927-11	ELECT 4.7MF 20% 50V
C15	1-161-494-00	CERAMIC 0.022MF 25V
C16	1-124-908-11	ELECT 22MF 20% 25V
C17	1-162-286-31	CERAMIC 220PF 10% 50V
C18	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C19	1-124-927-11	ELECT 4.7MF 20% 50V
C20	1-124-902-00	ELECT 0.47MF 20% 50V
C21	1-124-499-11	ELECT 1MF 20% 50V
C22	1-123-875-11	ELECT 10MF 20% 50V
C23	1-124-499-11	ELECT 1MF 20% 50V
C30	1-124-446-11	ELECT 47MF 20% 10V
C31	1-161-379-00	CERAMIC 0.01MF 30% 16V
C44	1-161-053-00	CERAMIC 0.015MF 10% 25V
C45	1-124-902-00	ELECT 0.47MF 20% 50V
C46	1-161-053-00	CERAMIC 0.015MF 10% 25V
C47	1-124-902-00	ELECT 0.47MF 20% 50V
C53	1-161-379-00	CERAMIC 0.01MF 30% 16V
C59	1-162-282-31	CERAMIC 100PF 10% 50V
C65	1-124-499-11	ELECT 1MF 20% 50V
C101	1-162-292-31	CERAMIC 680PF 10% 50V
C102	1-162-292-31	CERAMIC 680PF 10% 50V
C103	1-124-908-11	ELECT 22MF 20% 25V
C104	1-130-483-00	MYLAR 0.01MF 5% 50V
C105	1-161-056-00	CERAMIC 0.027MF 10% 25V
C106	1-124-499-11	ELECT 1MF 20% 50V
C107	1-124-902-00	ELECT 0.47MF 20% 50V
C108	1-124-443-00	ELECT 100MF 20% 10V
C109	1-130-484-00	MYLAR 0.012MF 5% 50V
C110	1-124-499-11	ELECT 1MF 20% 50V
C111	1-124-499-11	ELECT 1MF 20% 50V
C112	1-161-057-00	CERAMIC 0.033MF 10% 25V
C114	1-130-470-00	MYLAR 820PF 5% 50V
C151	1-124-499-11	ELECT 1MF 20% 50V
C152	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C153	1-162-851-11	CERAMIC 0.1MF 10% 16V
C154	1-124-499-11	ELECT 1MF 20% 50V
C155	1-124-499-11	ELECT 1MF 20% 50V
C156	1-161-057-00	CERAMIC 0.033MF 10% 25V
C157	1-124-499-11	ELECT 1MF 20% 50V
C158	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C159	1-124-465-00	ELECT 0.47MF 20% 50V
C160	1-162-294-31	CERAMIC 0.001MF 10% 50V
C161	1-162-851-11	CERAMIC 0.1MF 10% 16V
C162	1-162-294-31	CERAMIC 0.001MF 10% 50V
C163	1-124-499-11	ELECT 1MF 20% 50V
C164	1-161-327-00	CERAMIC 0.0033MF 30% 16V
C165	1-161-023-00	CERAMIC 0.068MF 10% 25V
C166	1-124-927-11	ELECT 4.7MF 20% 50V
C167	1-124-443-00	ELECT 100MF 20% 10V
C168	1-124-443-00	ELECT 100MF 20% 10V
C169	1-136-165-00	FILM 0.1MF 5% 50V
C170	1-124-472-11	ELECT 470MF 20% 10V
C172	1-162-294-31	CERAMIC 0.001MF 10% 50V
C173	1-162-282-31	CERAMIC 100PF 10% 50V
C174	1-161-494-00	CERAMIC 0.022MF 25V
C175	1-102-106-00	CERAMIC 100PF 10% 50V

Ref.No.	Part No.	Description			
C301	1-124-443-00	ELECT	100MF	20%	10V
C302	1-124-446-11	ELECT	47MF	20%	10V
C303	1-124-927-11	ELECT	4.7MF	20%	50V
C304	1-123-875-11	ELECT	10MF	20%	50V
C305	1-162-291-31	CERAMIC	560PF	10%	50V
C306	1-161-054-00	CERAMIC	0.018MF	10%	25V
C307	1-124-443-00	ELECT	100MF	20%	10V
C308	1-124-446-11	ELECT	47MF	20%	10V
C309	1-126-176-11	ELECT	220MF	20%	10V
C310	1-124-908-11	ELECT	22MF	20%	25V
C311	1-124-927-11	ELECT	4.7MF	20%	50V
C312	1-130-484-00	MYLAR	0.012MF	5%	50V
C313	1-130-479-00	MYLAR	0.0047MF	5%	50V
C314	1-124-443-00	ELECT	100MF	20%	10V
C315	1-162-839-11	CERAMIC	0.01MF	10%	16V
C316	1-162-837-11	CERAMIC	0.0068MF	10%	16V
C317	1-124-499-11	ELECT	1MF	20%	50V
C318	1-124-499-11	ELECT	1MF	20%	50V
C320	1-124-927-11	ELECT	4.7MF	20%	50V
C321	1-124-927-11	ELECT	4.7MF	20%	50V
C322	1-131-404-00	ELECT(SOLID)	0.22MF	10%	25V
C323	1-124-443-00	ELECT	100MF	20%	10V
C324	1-124-927-11	ELECT	4.7MF	20%	50V
C325	1-124-927-11	ELECT	4.7MF	20%	50V
C326	1-124-499-11	ELECT	1MF	20%	50V
C351	1-124-443-00	ELECT	100MF	20%	6.3V
C352	1-124-443-00	ELECT	100MF	20%	6.3V
C353	1-124-442-00	ELECT	330MF	20%	6.3V
C354	1-124-472-11	ELECT	470MF	20%	10V
C355	1-124-499-11	ELECT	1MF	20%	50V
C356	1-124-120-11	ELECT	220MF	20%	16V
C357	1-161-379-00	CERAMIC	0.01MF	30%	16V
C358	1-161-379-00	CERAMIC	0.01MF	30%	16V
C359	1-124-120-11	ELECT	220MF	20%	16V
C360	1-124-120-11	ELECT	220MF	20%	16V
C361	1-161-494-00	CERAMIC	0.022MF		25V
C362	1-123-875-11	ELECT	10MF	20%	50V
C363	1-124-902-00	ELECT	0.47MF	20%	50V
C364	1-124-927-11	ELECT	4.7MF	20%	50V
C365	1-124-443-00	ELECT	100MF	20%	10V
C366	1-101-006-00	CERAMIC	0.047MF		50V
C367	1-101-006-00	CERAMIC	0.047MF		50V
C368	1-124-927-11	ELECT	4.7MF	20%	50V
C369	1-124-443-00	ELECT	100MF	20%	10V
C370	1-162-294-31	CERAMIC	0.001MF	10%	50V
C371	1-124-443-00	ELECT	100MF	20%	10V
C372	1-124-477-11	ELECT	47MF	20%	16V
C373	1-124-120-11	ELECT	220MF	20%	16V
C374	1-124-443-00	ELECT	100MF	20%	10V
C375	1-124-120-11	ELECT	220MF	20%	16V
C376	1-136-165-00	FILM	0.1MF	5%	50V
C377	1-136-165-00	FILM	0.1MF	5%	50V
C378	1-124-925-11	ELECT	2.2MF	20%	50V
C379	1-124-443-00	ELECT	100MF	20%	10V
C380	1-162-282-31	CERAMIC	100PF	10%	50V
C381	1-130-470-00	MYLAR	820PF	5%	50V
C382	1-130-473-00	MYLAR	0.0015MF	5%	50V

Ref.No.	Part No.	Description			
C383	1-161-379-00	CERAMIC	0.01MF	30%	16V
C385	1-162-282-31	CERAMIC	100PF	10%	50V
C386	1-102-074-00	CERAMIC	0.001MF	10%	50V
C601	1-123-875-11	ELECT	10MF	20%	50V
C602	1-123-875-11	ELECT	10MF	20%	50V
C901	1-124-898-11	ELECT	4700MF	20%	16V
C902	1-161-379-00	CERAMIC	0.01MF	30%	16V
C903	1-161-379-00	CERAMIC	0.01MF	30%	16V
C904	1-161-379-00	CERAMIC	0.01MF	30%	16V
CF1	1-567-245-11	FILTER, CERAMIC			
CF2	1-567-245-11	FILTER, CERAMIC			
CF3	1-567-164-00	VIBRATOR, CERAMIC			
CN1	*1-564-340-00	PIN, CONNECTOR 6P			
CN2	*1-564-187-00	PIN, CONNECTOR (TP ANT)			
CN301	*1-560-467-00	PIN, CONNECTOR 4P			
CN302	*1-560-469-00	PIN, CONNECTOR 6P			
CN303	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN304	*1-564-341-11	PIN, CONNECTOR 7P			
CN306	*1-564-342-11	PIN, CONNECTOR 8P			
CN309	*1-564-340-00	PIN, CONNECTOR 6P			
CN310	*1-564-340-00	PIN, CONNECTOR 6P			
CN311	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN354	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P			
CN355	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN357	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN358	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN359	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CN361	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CN362	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN363	*1-564-707-21	PIN, CONNECTOR (SMALL TYPE) 5P			
CN364	*1-564-704-31	PIN, CONNECTOR (SMALL TYPE) 2P			
CN401	*1-564-721-21	PIN, CONNECTOR (SMALL TYPE) 5P			
CN601	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CN602	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CN901 ⚠	1-526-838-11	INLET, AC 2P			
CN902	*1-564-187-00	PIN, CONNECTOR			
CP2	1-236-079-11	ENCAPSULATED COMPONENT			
CT1-4 CV1-4	1-151-603-11	CAP, VARIABLE			
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D101	8-719-911-19	DIODE 1SS119			
D102	8-719-911-19	DIODE 1SS119			
D201	8-719-911-19	DIODE 1SS119			
D202	8-719-911-19	DIODE 1SS119			
D301	8-719-911-19	DIODE 1SS119			
D302	8-719-911-19	DIODE 1SS119			
D303	8-719-911-19	DIODE 1SS119			
D351	8-719-109-97	DIODE RD6.8ES-B2			
D352	8-719-911-19	DIODE 1SS119			
D353	8-719-911-19	DIODE 1SS119			
D354	8-719-911-19	DIODE 1SS119			
D355	8-719-911-19	DIODE 1SS119			
D357	8-719-918-97	DIODE SLP153B			

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
D358	8-719-918-97	DIODE SLP153B
D601	8-719-911-19	DIODE 1SS119
D602	8-719-911-19	DIODE 1SS119
D603	8-719-911-19	DIODE 1SS119
D604	8-719-911-19	DIODE 1SS119
D901	8-719-500-55	DIODE D3SBA10
F901 ⚠	1-532-215-11	(E,Saudi Arabia)...FUSE, TIME-LAG, 0.8A
F902 ⚠	1-532-350-00	FUSE, TIME-LAG, 4.0A
FL1	1-236-022-11	FILTER, BAND PASS
HCB301	A-3108-285-A	CHASSIS BLOCK ASSY, HEAD
HP301	A-3108-286-A	CHASSIS BLOCK ASSY, HEAD
IC1	8-759-908-89	IC CX20029
IC301	8-759-805-30	IC CXA1115BP
IC302	8-759-803-28	IC CXA1116S
IC303	8-759-933-22	IC BA3707
IC351	8-759-601-02	IC M5218P
IC352	8-759-604-18	IC M5243P06
IC353	8-759-820-22	IC LA4597
IC354	8-759-820-22	IC LA4597
J351	1-563-330-11	JACK (MIX MIC)
J352	1-563-716-11	JACK, PIN (CD/LINE IN)
J353	1-566-891-11	JACK (HEADPHONES A)
J354	1-566-819-11	JACK 1P (HEADPHONES B)
J355	1-563-330-11	JACK (SURROUND SP,R)
J356	1-563-330-11	JACK (SURROUND SP,L)
L1	*1-422-355-11	COIL, AIR-CORE
L2	1-459-418-00	COIL (WITH CORE)
L3	1-402-343-11	ANTENNA, FERRITE-ROD (MW)
L4	1-410-975-11	INDUCTOR 47UH
L7	1-410-965-21	INDUCTOR 1UH
L101	1-407-496-00	INDUCTOR 2.2MMH
L201	1-407-496-00	INDUCTOR 2.2MMH
M601	A-3133-332-A	MOTOR ASSY
M602	A-3133-332-A	MOTOR ASSY
PM901	1-454-459-11	SOLENOID, PLUNGER
Q101	8-729-806-26	TRANSISTOR 2SC3901
Q102	8-729-806-26	TRANSISTOR 2SC3901
Q151	8-729-806-30	TRANSISTOR 2SC4048
Q201	8-729-806-26	TRANSISTOR 2SC3901
Q202	8-729-806-26	TRANSISTOR 2SC3901
Q251	8-729-806-30	TRANSISTOR 2SC4048
Q301	8-729-806-30	TRANSISTOR 2SC4048
Q302	8-729-100-13	TRANSISTOR 2SC2001
Q303	8-729-806-24	TRANSISTOR 2SC3899
Q304	8-729-806-24	TRANSISTOR 2SC3899
Q351	8-729-177-32	TRANSISTOR 2SD773
Q352	8-729-801-83	TRANSISTOR 2SB1013
Q353	8-729-806-30	TRANSISTOR 2SC4048
Q354	8-729-806-30	TRANSISTOR 2SC4048
Q355	8-729-811-24	TRANSISTOR 2SD1012
Q356	8-729-811-24	TRANSISTOR 2SD1012
Q601	8-729-115-30	TRANSISTOR 2SK105A-30
Q602	8-729-806-30	TRANSISTOR 2SC4048
Q603	8-729-115-30	TRANSISTOR 2SK105A-30
Q604	8-729-206-24	TRANSISTOR RN1206
Q605	8-729-806-30	TRANSISTOR 2SC4048
Q606	8-729-600-27	TRANSISTOR 2SC634SP
Q607	8-729-801-83	TRANSISTOR 2SB1013
Q608	8-729-801-83	TRANSISTOR 2SB1013
Q609	8-729-600-27	TRANSISTOR 2SC634SP

Ref.No.	Part No.	Description			
R1	1-249-409-11	CARBON	220	5%	1/4W
R3	1-249-441-11	CARBON	100K	5%	1/4W
R5	1-249-441-11	CARBON	100K	5%	1/4W
R6	1-249-429-11	(AEP,Italian) ...CARBON	10K	5%	1/4W
R9	1-249-405-11	CARBON	100	5%	1/4W
R10	1-249-439-11	CARBON	68K	5%	1/4W
R11	1-249-428-11	CARBON	8.2K	5%	1/4W
R12	1-249-428-11	CARBON	8.2K	5%	1/4W
R13	1-249-421-11	CARBON	2.2K	5%	1/4W
R17	1-249-396-11	CARBON	18	5%	1/4W
R18	1-249-407-11	CARBON	150	5%	1/4W
R22	1-249-417-11	CARBON	1K	5%	1/4W
R101	1-249-417-11	CARBON	1K	5%	1/4W
R102	1-249-417-11	CARBON	1K	5%	1/4W
R103	1-249-411-11	CARBON	330	5%	1/4W
R104	1-249-431-11	CARBON	15K	5%	1/4W
R105	1-249-430-11	CARBON	12K	5%	1/4W
R106	1-249-422-11	CARBON	2.7K	5%	1/4W
R107	1-249-423-11	CARBON	3.3K	5%	1/4W
R108	1-249-429-11	CARBON	10K	5%	1/4W
R109	1-249-429-11	CARBON	10K	5%	1/4W
R110	1-249-414-11	CARBON	560	5%	1/4W
R111	1-249-400-11	CARBON	39	5%	1/4W
R112	1-249-405-11	CARBON	100	5%	1/4W
R113	1-249-417-11	CARBON	1K	5%	1/4W
R114	1-249-429-11	CARBON	10K	5%	1/4W
R115	1-249-427-11	CARBON	6.8K	5%	1/4W
R116	1-249-424-11	CARBON	3.9K	5%	1/4W
R117	1-249-411-11	CARBON	330	5%	1/4W
R151	1-249-437-11	CARBON	47K	5%	1/4W
R152	1-249-423-11	CARBON	3.3K	5%	1/4W
R153	1-249-424-11	CARBON	3.9K	5%	1/4W
R154	1-249-435-11	CARBON	33K	5%	1/4W
R155	1-249-437-11	CARBON	47K	5%	1/4W
R156	1-249-441-11	CARBON	100K	5%	1/4W
R157	1-249-438-11	CARBON	56K	5%	1/4W
R158	1-247-887-00	CARBON	220K	5%	1/4W
R159	1-249-441-11	CARBON	100K	5%	1/4W
R160	1-249-428-11	CARBON	8.2K	5%	1/4W
R161	1-249-441-11	CARBON	100K	5%	1/4W
R163	1-249-424-11	CARBON	3.9K	5%	1/4W
R164	1-249-417-11	CARBON	1K	5%	1/4W
R165	1-249-425-11	CARBON	4.7K	5%	1/4W
R167	1-249-426-11	CARBON	5.6K	5%	1/4W
R168	1-249-408-11	CARBON	180	5%	1/4W
R169	1-249-387-11	CARBON	3.3	5%	1/4W
R170	1-249-435-11	CARBON	33K	5%	1/4W
R171	1-249-406-11	CARBON	120	5%	1/4W
R172	1-249-408-11	CARBON	180	5%	1/4W
R174	1-249-418-11	CARBON	1.2K	5%	1/4W
R175	1-249-435-11	CARBON	33K	5%	1/4W
R301	1-249-401-11	CARBON	47	5%	1/4W
R302	1-249-438-11	CARBON	56K	5%	1/4W
R303	1-249-422-11	CARBON	2.7K	5%	1/4W

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description				
R304	1-249-428-11	CARBON	8.2K	5%	1/4W	
R305	1-249-411-11	CARBON	330	5%	1/4W	
R306	1-249-441-11	CARBON	100K	5%	1/4W	
R307	1-249-441-11	CARBON	100K	5%	1/4W	
R308	1-249-441-11	CARBON	100K	5%	1/4W	
R309	1-247-903-00	CARBON	1M	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-249-400-11	CARBON	39	5%	1/4W	
R312	1-249-400-11	CARBON	39	5%	1/4W	
R313	1-249-423-11	CARBON	3.3K	5%	1/4W	
R314	1-249-401-11	CARBON	47	5%	1/4W	
R315	1-249-429-11	CARBON	10K	5%	1/4W	
R316	1-249-393-11	CARBON	10	5%	1/4W	
R317	1-249-428-11	CARBON	8.2K	5%	1/4W	
R318	1-249-437-11	CARBON	47K	5%	1/4W	
R319	1-247-893-11	CARBON	390K	5%	1/4W	
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-441-11	CARBON	100K	5%	1/4W	
R322	1-247-899-11	CARBON	680K	5%	1/4W	
R323	1-249-401-11	CARBON	47	5%	1/4W	
R324	1-249-429-11	CARBON	10K	5%	1/4W	
R325	1-249-405-11	CARBON	100	5%	1/4W	
R326	1-249-401-11	CARBON	47	5%	1/4W	
R327	1-249-429-11	CARBON	10K	5%	1/4W	
R351	1-249-417-11	CARBON	1K	5%	1/4W	
R352	1-249-417-11	CARBON	1K	5%	1/4W	
R353	1-249-402-11	CARBON	56	5%	1/4W	
R354	1-249-401-11	CARBON	47	5%	1/4W	
R356	1-249-420-11	CARBON	1.8K	5%	1/4W	
R357	1-249-417-11	CARBON	1K	5%	1/4W	
R358	1-249-425-11	CARBON	4.7K	5%	1/4W	
R359	1-249-425-11	CARBON	4.7K	5%	1/4W	
R360	1-249-429-11	CARBON	10K	5%	1/4W	
R361	1-249-422-11	CARBON	2.7K	5%	1/4W	
R363	1-249-420-11	CARBON	1.8K	5%	1/4W	
R364	1-249-415-11	CARBON	680	5%	1/4W	
R365	1-247-903-00	CARBON	1M	5%	1/4W	
R366	1-249-425-11	CARBON	4.7K	5%	1/4W	
R367	1-249-417-11	CARBON	1K	5%	1/4W	
R368	1-249-411-11	CARBON	330	5%	1/4W	
R370	1-249-402-11	CARBON	56	5%	1/4W	
R371	1-249-434-11	CARBON	27K	5%	1/4W	
R372	1-249-434-11	CARBON	27K	5%	1/4W	
R373	1-249-402-11	CARBON	56	5%	1/4W	
R374	1-249-429-11	CARBON	10K	5%	1/4W	
R375⚠	1-249-387-11	CARBON	3.3	5%	1/4W	F
R376⚠	1-249-387-11	CARBON	3.3	5%	1/4W	F
R378⚠	1-217-637-00	FUSIBLE	1	5%	1/4W	F
R380	1-249-415-11	CARBON	680	5%	1/4W	
R381	1-249-420-11	CARBON	1.8K	5%	1/4W	
R382	1-249-405-11	CARBON	100	5%	1/4W	
R383⚠	1-217-640-11	FUSIBLE	3.3	5%	1/4W	F
R400	1-249-417-11	CARBON	1K	5%	1/4W	
R601	1-249-423-11	CARBON	3.3K	5%	1/4W	
R602	1-249-437-11	CARBON	47K	5%	1/4W	
R603	1-249-425-11	CARBON	4.7K	5%	1/4W	
R605	1-249-437-11	CARBON	47K	5%	1/4W	

Ref.No.	Part No.	Description				
R606	1-249-425-11	CARBON	4.7K	5%	1/4W	
R607	1-249-425-11	CARBON	4.7K	5%	1/4W	
R608	1-249-421-11	CARBON	2.2K	5%	1/4W	
R609	1-249-417-11	CARBON	1K	5%	1/4W	
R610	1-249-441-11	CARBON	100K	5%	1/4W	
R611	1-249-417-11	CARBON	1K	5%	1/4W	
R612	1-249-433-11	CARBON	22K	5%	1/4W	
R613	1-249-441-11	CARBON	100K	5%	1/4W	
R614	1-249-441-11	CARBON	100K	5%	1/4W	
R615	1-249-417-11	CARBON	1K	5%	1/4W	
R616	1-249-417-11	CARBON	1K	5%	1/4W	
R617	1-249-433-11	CARBON	22K	5%	1/4W	
R618	1-249-441-11	CARBON	100K	5%	1/4W	
R619⚠	1-217-638-11	(E,Saudi Arabia) ....FUSIBLE	1.5	5%	1/4W	F
R620⚠	1-217-638-11	(E,Saudi Arabia) ....FUSIBLE	1.5	5%	1/4W	F
RV351	1-237-922-11	RES, VAR, SLIDE 50K/50K (BASS BOOST)				
RV352	1-237-892-11	RES, VAR, SLIDE 50K/50K (400Hz)				
RV353	1-237-892-11	RES, VAR, SLIDE 50K/50K (2kHz)				
RV354	1-237-892-11	RES, VAR, SLIDE 50K/50K (10kHz)				
RV355	1-237-893-11	RES, VAR, SLIDE 50K/50K (BALANCE)				
RV356	1-237-891-11	RES, VAR, SLIDE 50K/50K (VOLUME)				
RV357	1-237-894-11	RES, VAR, SLIDE 50K/50K(SURROUND EFFECT)				
RV601	1-228-991-00	RES, ADJ, CARBON 2K (NORMAL A)				
RV602	1-228-993-00	RES, ADJ, CARBON 5K (HIGH A)				
RV603	1-228-991-00	RES, ADJ, CARBON 2K (NORMAL B)				
RV604	1-228-993-00	RES, ADJ, CARBON 5K (HIGH B)				
S1	1-571-482-11	SWITCH, LEVER SLIDE (BAND)				
S2	1-571-482-11	(AEP,Italian)...SWITCH, LEVER SLIDE (FM MODE)				
S301	1-570-916-11	SWITCH, SLIDE (REC/PB)				
S302	1-552-909-00	SWITCH, PUSH (TAPE SELECT)				
S303	1-571-301-11	SWITCH, SLIDE (DUBBING SPEED)				
S304	1-570-068-11	SWITCH, PUSH (1 KEY)(REC MUTE)				
S351	1-570-924-11	SWITCH, LEVER SLIDE (FUNCTION)				
S352	1-570-165-11	SWITCH, PUSH (1 KEY)(SURROUND)				
S353	1-571-302-11	SWITCH, PUSH (1 KEY)(TIMER/SLEEP)				
S358	1-570-907-11	SWITCH, SLIDE (ISS)				
S901	1-571-331-11	SWITCH, LEAF				
S902	1-571-330-11	SWITCH, LEAF				
S903	1-571-330-11	SWITCH, LEAF				
S904	1-571-332-11	SWITCH, MICRO SLIDE				
S905	1-571-331-11	SWITCH, LEAF				
S906	1-571-332-11	SWITCH, MICRO SLIDE				
S907	1-571-435-11	SWITCH, MICRO SLIDE				
SP151	1-503-760-11	SPEAKER				
SP251	1-503-760-11	SPEAKER				
SP351	1-503-632-11	SPEAKER				
T1	1-406-040-00	COIL (OSC)				
T301	1-433-321-11	TRANSFORMER, BIAS OSCILLATION				
T901⚠	1-449-316-11	(E,Saudi Arabia)...TRANSFORMER, POWER				
T901⚠	1-449-318-11	(AEP,Italian).....TRANSFORMER, POWER				
VS1 ⚠	1-554-752-11	(E,Saudi Arabia) ...SWITCH, VOLTAGE CHANGE				

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description
W303	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
W351	*1-564-782-11	PIN, CONNECTOR 4P
W352	*1-564-782-11	PIN, CONNECTOR 4P
W353	*1-564-782-11	PIN, CONNECTOR 4P
W361	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
W362	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
W364	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P

ACCESSORY & PACKING MATERIAL

⚠	.1-506-401-00	(Saudi Arabia)...ADAPTOR, CONVERSION
⚠	.1-551-521-21	(E).....CORD, POWER (DK-52)
⚠	.1-555-234-00	(AEP,Italian)....CORD, POWER
⚠	.1-559-342-11	(Saudi Arabia)...CORD, POWER
	3-334-173-01	SHEET, PROTECTION
	*3-344-791-01	(E,Saudi Arabia)...INDIVIDUAL CARTON
	*3-344-794-01	(AEP,Italian).....INDIVIDUAL CARTON
	*3-338-247-11	CUSHION (UPPER)
	*3-338-248-11	CUSHION (LOWER)
	*3-348-607-01	LABEL, CAUTION, COVER
	3-769-666-11	(AEP,E,Saudi Arabia) ...MANUAL, INSTRUCTION
	3-769-666-41	(AEP,Italian)....MANUAL, INSTRUCTION
	3-794-972-52	(Saudi Arabia)...INSTRUCTION

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-953-055-21

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Audio Group

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